

THE PERSONNEL ASSESSMENT CENTER:  
A REVIEW AND SUGGESTED APPLICATION

Galen Bruce Allen

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# NAVAL POSTGRADUATE SCHOOL

## Monterey, California



# THESIS

THE PERSONNEL ASSESSMENT CENTER:  
A REVIEW AND SUGGESTED APPLICATION

by

Galen Bruce Allen

June 1974

Thesis Advisor:

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Short and long term anticipated results are listed which cite potential benefits to individual participants, the NPS and the U. S. Navy.





The Personnel Assessment Center:  
A Review and Suggested Application

by

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## ABSTRACT

The concept of the personnel assessment center is introduced, explained and evaluated by means of personal interviews and a literature review. Next, a proposed design for a prototype assessment center for the Naval Postgraduate School (NPS) is offered along with the ancillary design of validation/evaluation/feedback systems. Finally, a justification, listing of tasks to be performed, and anticipated results are provided.

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## I. STATEMENT OF THE PROBLEM

During the past fifty years there have been dramatic advances in military "hardware" but relatively modest changes in personnel management techniques. Although the need to keep pace in weapons technology is not disputed, this writer believes that the potential return on investment available from improved personnel management has escalated sharply in the past few years--to the point where personnel research can now compete more successfully with "hard" research for scarce defense resources. This belief is based on three factors: (1) The contention that people vice hardware are usually the decisive factor in combat; (2) The impact of the All Volunteer Force concept on the U. S. military; and (3) The implications of the Operational, Technical, Managerial System (OTMS) for the U. S. Navy.

The first factor is mentioned (in a business vice military context) in Thompson's article [62] where he cites the view of D. C. Burnham, Chairman of Westinghouse Electric Corporation as follows: "Nearly everyone has the materials, the facilities, the techniques available to them, but how they use these things depends on their people." Admiral Thomas H. Moorer described the issue in a military context in an address to the graduating class at the Naval Postgraduate School on March 29, 1974. He reported that analyses of major naval battles of World War II disclosed that a majority of them were won by the side with



technically, and/or numerically, inferior forces. His conclusion was that the personnel involved had made the crucial difference.

The second factor evolves from recent changes in the fabric of U. S. society which have brought increasing pressure to bear on the military services toward increased consideration of individuals. This is compounded by the reality of the All-Volunteer concept which has forced the military services into head-to-head competition with industry over the nation's human resources. The "sanctuaries" (draft, etc.), so long enjoyed by the military, have been abolished, and this has thrust the military manpower problem onto center stage.

The third factor results, in part at least, from the other two which have begun to force changes in the traditional Naval Officer career patterns. The jack-of-all-trades, master-of-none Naval Officer generalist of yesteryear is finding it increasingly difficult to cope with the complex and varied problems of today's Navy. Bowling [6] expressed it thus:

It has been a long-accepted fact that the Navy needs both good operators and good managers. What has not been accepted or fully recognized is that, in the current technological, strategic, and tactical environment--given the complexities of nuclear ships and weapons systems, coupled with the relatively short span of an officer's career--it is no longer possible to develop both within the same individual.

He further recommended that the CNO:

. . . establish the policy that all unrestricted line officers specialize in either Operations or Management, with the understanding that both specialties will provide equal but parallel paths to selection for flag rank in the unrestricted line.





Although Bowling's arguments have merit, they also have drawbacks, and his concept of sea-going operators and shore-based managers did not come to pass. Instead, the Operational, Technical, Managerial System (OTMS) was established in the summer of 1972. The concept, and the rationale behind its development were described, in part, as follows [107]:

. . . Although there are several approaches which could be taken to provide specialization across the full spectrum of Navy endeavor, Admiral Zumwalt has firmly rejected the idea of going to a wet/dry Navy. (Writer's note: This was Bowling's proposal.) Navies of other nations have tried that approach and found it unsatisfactory. The Operational Technical Managerial System has as its goal the development of the broad sea and operationally-oriented unrestricted line officer blended with the technical expertise normally found in the restricted line and staff corps . . . Before a naval officer should consider becoming a career subspecialist (concentration within a subspecialty area), the officer should complete at least two operational tours . . . Through a system of evolution we are implementing . . . development and identification systems to meet the wide spectrum of Navy technical and managerial requirements.

These factors illustrate the continuing and increasing need for selection (hiring, firing, promoting), development and placement within the U. S. Navy. In this macro context the need is for an integrated systems approach to personnel management involving many complementary subsystems. This study focused on one (proposed) subsystem: the personnel assessment center. The approach used was: First, to research the philosophies, structures and applications of the assessment center concept, and evaluate the concept in the areas of selection, development and placement; and, next, to put the assessment center in perspective within an "ideal" personnel management system, explaining the interfaces and relationships



between the assessment center and other subsystems; and, finally, to develop a research proposal for the design of a prototype personnel assessment center for the management curriculum of the Naval Postgraduate School.

Hardesty and Jones [31] offer their opinion as to the potential value of the assessment center:

Because the concern of the assessment center is with the organization's leaders of the future, the ultimate validity of this program . . . may well be measurable in the future success of the companies as contrasted to similar companies who do not make such an effort. The stakes are high, but on the other hand they always have been . . .

If the stakes are considered to be high in the business world, can they be otherwise in the military? The professional military man is acutely aware of the consequences of finishing second in combat. There will always be a need for good men and women--the problems are finding, developing and retaining them. This paper is devoted to the examination of one proposed solution to those problems: the personnel assessment center.



## II. BACKGROUND

### A. DEFINITIONS

A typical industrial assessment center is described by Byham [11] as follows:

In these centers, specially trained managers (and occasionally psychologists) act as "assessors" who evaluate candidates for promotion--either into management or within management--on their potential and their areas of weakness. Groups of men pass through series of standardized exercises such as management games, in-basket tests, and leaderless discussion sessions, while assessors observe their behavior closely.

The assessors discuss each candidate's performance separately and then generate a comprehensive report on each candidate which management can combine with current performance information as it sees fit. As well as identifying the men most likely to succeed, the assessment reports spell out the individual deficiencies of each candidate and suggest guidelines for management to use in developing him.

The U. S. Army Infantry School (USAIS) Assessment Center [127] uses this definition:

The term assessment center is used to describe a process by which candidates for a position are put through a series of standardized exercises designed to simulate the conditions of that position and to show if they have the skills and abilities necessary to perform it.

The assessment process is conducted using a series of situational exercises designed to measure leadership behaviors and skills one level higher than the individual has performed. Officer candidates are cast in the role of 2nd lieutenants, lieutenants as company commanders, and senior NCOs as platoon leaders. In addition, a battery of psychological tests are used to measure attitudes, mental ability, reading skills and interests. Peer ratings and self ratings combined with those of the trained assessment staff provide a trifocal view of each individual tested.

As indicated by the USAIS definition, the term assessment center more properly refers to a process or program rather



than to a physical location. In fact, some "assessment centers" are taken to various corporation field sites for administration vice transporting candidates to an "assessment center" facility.

## B. HISTORY

Various articles have traced the genesis of the assessment center to the Bible. Wilson and Tatge [70] reference the advice which Jethro gave to Moses on selecting his rulers:

Moreover thou shalt provide out of all the people, able men, such as fear God, men of truth, hating covetousness; and place such over them to be ruler of thousands, and rulers of hundreds, rulers of fifties, and rulers of tens.

Jaffee [35] cites Judges, Chapter 7 as the first use of situational techniques:

. . . the Lord provided Gideon with a means of choosing the best among his men. "Bring them down unto the water, and I will try them for thee there . . . . Separate every one that lappeth of the water with his tongue, as a dog lappeth, him shalt thou set by himself; likewise every one that boweth down upon his knees to drink . . . ."

From an initial force of 32,000 men, Gideon was able to select, by such techniques, an elite group of 300 and routed a numerically superior army.

Prior to, and during, World War II the Germans used multiple assessment techniques in officer selection. The German efforts inspired the British War Officer Selection Boards (WOSB), which in turn influenced the program of the Office of Strategic Services (OSS) in this country. The other primary influence in the OSS program was the presence of Dr. Henry Murray of Harvard who brought with him concepts derived from his multiple assessments in personality research [97]. Assessment of Men [99] by the OSS Assessment Staff is a detailed and very readable account of this effort.







All of the programs mentioned thus far were designed for the purpose of selection, however the wartime environment afforded neither time nor opportunity for proper validation.

Following the war, only the British retained operational assessment programs. Their Civil Service Selection Boards (CISSB) began validation efforts, while the WOSB evolved into the Royal Commissions Board (RCB) of today.

As West Germany began rebuilding her armed forces, the Federal German Navy established an extremely sophisticated six-week assessment program for its officers [57]. This program has recently been merged into a tri-service staff officer course.

Since the close of the OSS centers, the U. S. military has only dabbled sporadically in assessment center research. The latest effort was launched in 1973 when the U. S. Army chartered a one-year evaluation of a pilot personnel assessment program. This pilot program was established at the U. S. Army Infantry School (USAIS), Fort Benning, Georgia.

In addition to the British and Germans, the Australian Army and Israeli armed forces are known to have assessment programs.

Although the U. S. military has lagged other nations in the use of assessment centers since WW II, U. S. industry has pioneered in the field. Dr. Douglas Bray of AT&T set up an assessment program within the Management Progress Study in 1956. Dr. Bray [7] describes this study as follows:

Although the Management Progress Study was instituted as a long-term study without any expectation of immediate



practical results . . . . , the mere conduct of the study and the reporting of gross observations on the total group of subjects have led to significant changes in certain personnel practices . . . . Among them are . . . . the application of the assessment center method to the selection and development of managers.

The Management Progress Study was designed as a ten-year longitudinal study--and indeed it was continued to fruition--but the merits of the assessment center were quickly recognized and the first operational assessment center in the AT&T system opened its doors in 1958. Following AT&T's lead, other U. S. firms, such as : IBM, General Electric, J. C. Penney, Standard Oil (Ohio) and Sears, established assessment centers, and the program spread to other countries.

The influence of the AT&T program has been considerable and most of the subsequent assessment programs bear at least partial resemblance to it.

### C. OVERVIEW

Although all assessment programs emanate from the same basic concepts, they differ considerably along certain dimensions, notably:

1. Objectives (Selection, development, placement or research).

Most of the applications are for selection, however a growing number have development as a secondary objective.

2. Program Philosophies

Assessment philosophies range along a continuum from psychometric to behavioral--or in another sense, from signs to samples. There are a few programs at either extreme, however most fall nearer the center and incorporate both signs and samples.



### 3. Program Lengths

These vary from one day to six weeks. The majority are five days; with two and one-half to three days of assessment followed by two to two and one-half days of evaluation and report writing by the assessors.

### 4. Assessment Variables

Since most programs are selection-oriented, the big emphasis has been on stable variables. If development were a program objective, unstable variables would have to be included to identify those areas offering a viable training potential. Numbers of variables assessed vary from ten to fifty-two. Howard, in her survey of current assessment programs, [34] found the following dimensions to be the most popular: "(a) leadership, (b) organizing and planning, (c) decision making, (d) oral and written communications skills, (e) initiative, (f) energy, (g) analytical ability, (h) resistance to stress, (i) use of delegation, (j) behavior flexibility, (k) human relations competence, (l) originality, (m) controlling, (n) self-direction, and (o) overall potential."

### 5. Program Content (Instruments and techniques).

The content of the program should be an extension of the program philosophy. The listing which follows will proceed from signs to samples and will be as inclusive as possible, vice representative of any single program:

a. Paper and pencil tests of attitudes, interests, mental ability, and achievement (math, reading grammar, etc.).

b. Projective personality tests such as sentence completion, adjective check-lists, etc..



c. Interviews by assessors. Some programs also have assessees interview other role-playing assessees to evaluate their interviewing ability.

d. Written assignments such as essays. These may be solicited prior to arrival at the center. The topic may be of the candidate's choice, or assigned to him.

e. Simulations may be either individual (the in-basket for instance) or group (such as leaderless group discussions, management games, war games, etc.).

The in-basket is a widely-used individual simulation with high face validity and a concomitant training effect. It consists of a series of notes, memos, and letters typical of the in-basket of the position for which the candidate is being evaluated. The scenario imposes a time constraint and forces the assessee to work alone without recourse to other individuals. He is provided ample information on the role he will play, (such as an organizational chart, pertinent personal data on key associates, etc.) and is asked to put all of his responses in writing. He may delegate items to subordinates, take action himself, defer action until further information is obtained, schedule meetings, or write letters, as he sees fit. Most programs schedule an interview session following the in-basket where an assessor can question the candidate on the motives behind his actions. Evaluations of the in-basket range from informal subjective impressions to highly-structured objective analyses.

Leaderless group discussions typically assign the candidates differing points of view which they are to defend







individually. Following this discussion, they are asked to rank-order the positions. Since the points of view are designed to be equal in desirability, the candidate who is most persuasive, influential and accepted by the group should emerge with the "winning" position.

The various "games" used in assessment programs can provide evaluations of leadership ability, interpersonal skills, ~~decision making ability, organizational ability~~ and resistance to stress--depending on the particular objectives of the program.

#### 6. The Assessors

Several sources state that familiarity with the position sought by the candidates is the single most important attribute of an assessor. This probably explains why most programs utilize line managers two to three levels above the "assessment position" as assessors. A few programs employ clinical psychologists to interpret the projective tests, but very few have psychologists actively involved in the assessment and evaluation processes. Assessor/assessee ratios range from 1:1 to 1:4 and length of assignment as an assessor varies from one program (one to two weeks) to six to eight months or longer. Assessor training periods may be as short as a few days or as long as two to three weeks. The training may include lectures, films, etc., but the most effective and widely-used training technique is to involve the trainee in actual assessments on a "norm group." AT&T uses successful incumbents of the position being sought by candidates as the "norm group." This provides assessor trainees with two benefits: (1) a tangible example of performance



by organizationally defined "successes," and (2) an opportunity to err while learning without jeopardizing a candidate's career. A point upon which there is unanimous agreement is that well-trained assessors are an absolute prerequisite of an effective assessment program.

## 7. The Evaluations

After the assessments are completed, the assessors document their observations. A meeting is then held where candidates' records are reviewed individually and ratings made by the assessors on the basis of all available information. Any disparities in the ratings are discussed further, however few organizations require consensus (e.g., that disparate ratings be changed). The final result may be "pass-fail" recommendations to line management, or merely reports of the assessors' evaluations. These reports are usually in narrative form (considered best for use by laymen), however some firms prefer profiles consisting of graphs or scales.

## 8. Uses of the Data

Most programs are selection oriented, however final selection decisions are not made by the assessors (with the possible exception of initial hiring situations where job performance data is not available, and the Federal German Navy program). In most programs, assessment evaluations are furnished to line management where it can be integrated with other information, such as performance appraisal data, as the managers see fit. In such cases (the majority) selection decisions lie solely with line management.



Development applications are few, but increasing in numbers. They generally provide the candidate with knowledge of his strengths and weaknesses. The "ultimate" outcome would be a comprehensive development plan specifically tailored to the individual.

Programs with placement as an objective are rare. The Sohio program includes placement as an objective and is described by Finkle and Jones [85].

#### 9. Feedback to Candidates

Feedback is a part of most programs--including selection oriented ones--even though it represents a developmental function. It may be provided to all candidates, or only to those who request it. Feedback may be given by lay assessors, psychologists or line managers--as the organization prefers. It is usually oral, confined to observed behaviors and test performance, and provides the candidate with recommendations for a personal development plan.

#### 10. Summary

Bender [3] provides an excellent overview summary. He conducted a survey of organizations operating assessment centers and obtained data from thirty-four operational programs. The results of his survey are presented in the following figures and provide a good picture of the current character of assessment in the United States and Canada.



Figure 1.

Primary Evaluation Devices Used by Companies  
Operating Assessment Centers

	Yes	No	Not Checked
In-basket exercises used.	31	3	
Business games exercises used.	30	4	
Assigned roles	19	11	4
Nonassigned roles	20	12	2
Leaderless group discussion exercises used.	31	0	3
Assigned roles	23	9	2
Nonassigned roles	23	9	2
Films used.	5	29	
Video tapes used.	15	19	
Psychological tests used.	20	13	1
For the most part, assessment devices are locally produced.	23	10	1
For the most part, assessment devices are purchased externally.	9	24	1
An in-depth background interview is given to assessees.	22	12	

Source: Bender [3]





Figure 2.

Operating Procedures Followed in Administration  
of Assessment Centers

	Yes	No	Not Checked
Assesseees are nominated by supervision.	30	4	
Assesseees nominate themselves for assessment.*	9	23	2
A full-time director administers the assessment center.	11	23	
A part-time director administers the assessment center.	19	15	
The assessment center director is an industrial psychologist.	11	23	
Females are assessed.**	25	9	
Minorities are assessed.**	29	4	1
Homework is assigned.	13	21	
Assessee's performance is considered as pass or fail.	3	31	
Female assessors are used.	13	20	1
Assessment is conducted off-site and away from the work environment.	25	9	
Assessors rotate in viewing assesseees during evaluation.	29	5	
Assessee performance is video-taped for use in evaluation.	11	23	
Re-assessment of assesseees is permitted.	19	15	
A checklist for evaluation is used by assessors during evaluation.	24	10	
Peer evaluations are made by assesseees.	24	10	
Assessment center has been validated against performance criteria.	16	18	

\*Two companies considering for future evaluation.

\*\*Only one organization indicated that it had not yet assessed  
either females or minorities, but it added that no restrictions  
existed for not doing so.

Source: Bender [3]



Figure 3.

### Operating Characteristics of Assessment Centers

Number of assessees evaluated when your assessment center operates:

Response frequency	$\frac{6}{13}$	$\frac{8}{2}$	$\frac{10}{2}$	$\frac{12}{11}$	$\frac{18}{2}$	$\frac{24}{3}$
--------------------	----------------	---------------	----------------	-----------------	----------------	----------------

Levels assessed by your assessment center:\*

First Line	Middle management	Upper management	Newly hired
24	17	3	7

Number of days your assessment center operation takes:

Response frequency	$\frac{1}{1}$	$\frac{1.5}{2}$	$\frac{2}{10}$	$\frac{2.5}{1}$	$\frac{3}{2}$	$\frac{3.5}{1}$	$\frac{4}{4}$	$\frac{5}{11}$	$\frac{6}{1}$
--------------------	---------------	-----------------	----------------	-----------------	---------------	-----------------	---------------	----------------	---------------

Total number of evaluation exercises used during the operation of your assessment center:

Response frequency	$\frac{4}{7}$	$\frac{5}{6}$	$\frac{6}{3}$	$\frac{7}{4}$	$\frac{8}{1}$	$\frac{9}{1}$	$\frac{10}{2}$	$\frac{11}{2}$	$\frac{15}{1}$	$\frac{40}{1}$
--------------------	---------------	---------------	---------------	---------------	---------------	---------------	----------------	----------------	----------------	----------------

Number of years your assessment center has been in operation:

Response frequency:	$\frac{0-1}{1}$	$\frac{1}{12}$	$\frac{2}{7}$	$\frac{3}{3}$	$\frac{4}{1}$	$\frac{5}{2}$	$\frac{6}{3}$	$\frac{8}{1}$	$\frac{10}{1}$	$\frac{15}{1}$
---------------------	-----------------	----------------	---------------	---------------	---------------	---------------	---------------	---------------	----------------	----------------

Number of employees you have assessed to date:+

Response frequency:	$\frac{0}{1}$	$\frac{0-500}{25}$	$\frac{500-1000}{5}$	$\frac{1000-3000}{2}$	$\frac{75000}{1}$
---------------------	---------------	--------------------	----------------------	-----------------------	-------------------

\*Several companies indicated that their assessment center was used for evaluation of more than one level of supervision.

+One center was not yet operational.

Source: Bender [3]



Figure 4.

Evaluation Parameters Most Frequently Observed in  
Assessment Centers

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<u>Parameter</u>	<u>Response Frequency</u>
Impact	18
Energy	21
Forcefulness	19
Perception	16
Creativity	17
Range of interests	12
Salesmanship	16
Listening skill	12
Risk-taking	16
Independence	14
Management control	16
Use of delegation	21
Problem analysis	24
Leadership	29
Oral communication skills	30
Oral presentation skills	21
Written communication skills	23
Organizing and planning	27
Decision-making skills	25
Inner work standards	10
Resistance to stress	24
Attitude toward peers	12
Attitude toward subordinates	8
Attitude toward superiors	11
Self-evaluation	11
Behavioral flexibility	21

Source: Bender [3]



Figure 5.

Uses Made of Performance Data  
Generated by Assessment Centers

	Yes	No	Not Checked
Assesseees are provided immediate feedback on their performance.	21	12	1
Feedback is given orally to the assessee.	33	0	1
Feedback is given in writing to the assessee.	10	22	2
Feedback is given through the line organization.	16	15	3
Feedback is given assessee only by assessment center personnel.	21	12	1
Assessee's evaluation is made available to top management.	24	8	2
Evaluation results are used to prepare a formal plan of develop- ment for the assessee.	23	9	2
A follow-up of an assessee's continued development after assessment results are reported is a routine function of assessment center activities.	14	17	3

Source: Bender [3]





Figure 6.

A Summary of Key Characteristics of Assessment Centers

---

In-basket exercises are used.  
Games and leaderless group discussions (with both assigned and nonassigned roles) are used.  
Psychological tests are used in conjunction with simulated exercises.  
Assessment instruments are locally produced.  
In-depth interviews are conducted.  
Assesseees are nominated by supervision.  
Four simulation exercises are used during evaluation.  
Assessment centers are operated by part-time directors.  
Females are assessed.  
Minorities are assessed.  
Homework is assigned.  
Assessment is conducted away from the work environment.  
Assessors rotate in viewing assesseees during evaluation.  
Re-assessment is permitted.  
Peer evaluations are made by assesseees.  
One assessor for one assessee is used.  
A maximum of six people are assessed at one time.  
Assessors are two organizational levels above assesseees.  
Assessment centers operate for three days.  
Assessee's performance is rated, not ranked.  
Rating systems are based on research.  
Parameters assessed depend on the purpose of the assessment center.  
Assesseees receive immediate oral feedback on their performance.  
Assesseees receive written feedback on their performance.  
Feedback is disseminated by assessment center personnel.  
Assessment center results are used for formal development plans.

Source: Bender [3]



### III. APPROACH

#### A. INTERVIEWS

Working within time and fund constraints, four sites were visited. These included two military (U. S. Army) applications, an AT&T (Pacific Bell Telephone) assessment center and an assessor training session for a one-day behaviorally-oriented program. A brief summary of the visits with lists of significant aspects of each site and application follows.

1. United States Army War College (USAWC), Carlisle Barracks, Pennsylvania

This visit afforded the opportunity to interview individuals who were involved in the USAWC "Study of Leadership for the Professional Soldier" [128], [129], [130], and [131]; namely, Dr. Donald D. Penner and LTCOL Dandridge M. Malone. In addition to providing copies of the references cited above, and amplifying information on the study, they outlined some of the Army's other activities which preceded the USAIS assessment program.

The influence of the Center for Creative Leadership in Greensboro, North Carolina (Olmstead, et.al.[122] refers) was explained. When the Army became seriously interested in assessment centers, a few years ago, twelve Brigadier Generals were sent through the Center for Creative Leadership to determine their reaction to an assessment program. This program was purported to contain several paper and pencil tests and one complex simulation. The simulation is of particular interest. It featured a scenario set in the 31st century, and required



candidates to cycle through six defined leadership roles. The futuristic setting was chosen to eliminate any possibility of bias from previous candidate experience. The entire simulation was observed by assessors through "one-way" mirrors, and also video-taped. At intervals, action was halted and candidates were asked to record their perceptions of the exercise at that point. This simulation lasted an entire day, and was followed by a detailed feedback which stressed the comparison between the individual's self-perception and the perception of him by others.

Because this program is oriented toward research and self-development, the Center does not provide any assessment information to a candidate's parent organization. It does, however, provide transcripts, video tapes and other data obtained, directly to the candidate. The twelve Brigadiers who underwent assessment were reported as enthusiastic in their endorsement of the program as a vehicle of personal inventory and development.

LTCOL Quay Snyder [124] offered much detail on the AWC Inventory and Assessment. His review of relevant instruments and information on source material was especially valuable.

Probably the greatest benefit from the AWC visit derived from the constructive criticisms of this writer's concepts of an assessment program, and the alternative suggestions offered. Though too numerous to acknowledge individually, there were many seeds which took root and flourished during the ensuing research period. The results provide much of the substance of this thesis.



Some of the more significant factors were:

- a. The concept of more than one assessment during the course of a career.
- b. The "systems approach" to personnel management which views assessment centers as a subsystem of the larger system.
- c. The USAWC Leadership Study.
- d. ~~An assessment program applied in a military environment.~~
- e. An assessment program devoted exclusively to development.

2. United States Army Infantry School (USAIS) Assessment Center Pilot Project

This operation represents a current military application of the "AT&T model," e.g., a program which utilizes a mix of paper and pencil tests and experiential instruments. The visit afforded interviews with the director, COL Wallace Veaudry; assistant director LTCOL Kenneth Smith; staff members, MAJ John Campbell and MAJ Richard Davis; and Dr. Kay Smith of the Army Research Institute (ARI) Field Unit which is co-located with the assessment center.

The USAIS assessment program entails forty hours of assessment in a three-day period. This heavy schedule is a result of the inclusion of "competing" instruments for evaluation. At the completion of the evaluation, the program will be factor analyzed and those instruments with little or no unique contribution will be eliminated. This should streamline the program to a more realistic schedule.





A unique feature of this visit was the fact that current staff members had been involved in the design and implementation as well as the operation of the assessment program. Because of this, staff members were exceptionally understanding and knowledgeable concerning the focus and requirements of this study. Additional background on U. S. Army assessment center research was provided, and an assessment center research program conducted at Fort McClellan, Alabama circa 1965 was reported. It was described as a very expensive operation where candidates were assessed one at a time, thus the assessor/candidate ratio was something like 12:1. In contrast, the present USAIS ratio is about 11:18, which is more representative of ratios in current industrial assessment programs. The use of video tape, and the structure and content of the counseling feedback were other facets of the program worthy of mention.

In summary, the following items were of particular interest:

- a. Information concerning assessment center design, and implementation--as well as operation. (Olmstead et.al. [122] pertains to design of this program).
- b. Simulations tailored to military situations.
- c. Use of video-tape in analysis and counseling.
- d. Feedback techniques and counseling training.
- e. Differences between programs, reflecting different levels of candidates and positions being assessed for, e.g., differences in course content between the following:



<u>Course</u>	<u>Candidate Level</u>
Officer candidate course	E5
Advanced NCO course	E6-E7
Basic Officer course	LT
Advanced officer course	CPT

f. Assessor training and employment. (Assessors are assigned for a normal tour of duty--about two years--therefore are long-term in contrast with short-term assessors prevalent in industry programs).

3. Dr. Cabot L. Jaffee, Florida Technological University, Orlando, Florida

The visit coincided with an assessor training session which Dr. Jaffee was conducting for selected civil service personnel of the Naval Training Center, Orlando. The training was in preparation for a one-day assessment program composed of behavioral instruments (simulations, etc.). This provided an opportunity to observe assessor training which included the administration and scoring of the in-basket exercise included in the assessment program.

Dr. Jaffee has extensive experience in the field of assessment centers and has contributed much to the literature [16], [35], [36], [89] and [90]. Because of this, his comments, criticisms and suggestions were particularly valued.

Highlights of the visit were:

- a. Observation of assessor training.
- b. Views of a prominent consultant in the field of assessment centers.



4. Personnel Assessment Review (PAR) Program, Pacific Telephone Company, Oakland, California

Because of the great influence of the "AT&T model" on subsequent assessment programs, a visit to a Bell system program was given high priority. During the interview attention was focused on operational aspects rather than design or theory.

Salient points of the program included:

- a. Clinical combination of variables in the evaluation process.
- b. Practice of having candidates' supervisors observe the evaluation process.
- c. Pre-assessment interviews done by assessors at candidate's organization.
- d. Feedback to candidates done by assessors at candidate's organization.
- e. Practice of mixing men and women in groups vice assessing them separately.

B. LITERATURE REVIEW

1. Overviews

This section is provided as a guide for the reader who seeks additional overview information. It does not contain descriptive data, per se, but rather directs the reader to selected articles in the literature. Those readers not desiring such referral advice may proceed directly to section III-B-2, Current Applications.

Several articles in the literature provide excellent overviews. These will be cited in the following order: (1) General articles covering a wide range of programs, (2) Articles



dealing with a particular type of program (e.g., the five-day program patterned after the AT&T model, etc.), (3) Articles dealing with specific organizational programs.

An article in Business Week [68] provides a broad survey of the field from one-day assessment programs, to the "five-day" programs employed by larger firms such as AT&T, J. C. Penney, Standard Oil (Ohio), etc. and gives some rough cost figures. Howard [34] presents an excellent aggregation of information from the entire field. Cohen and Jaffee [16], although primarily concerned with government applications, cover most of the significant developments in the field. They also provide some predictions on future growth and changes in government assessment center applications.

Slevin [59] describes a program typical of those found in the major firms employing assessment centers (e.g., AT&T, Sears, IBM, General Electric, J. C. Penney, Standard Oil of Ohio, etc.). This article has a particularly comprehensive coverage of the subject, touching briefly on most of the major topical areas. This writer considers Slevin's predictions for the future of assessment centers to be particularly perceptive and well-founded. Other authors writing on assessment programs of this type include: Albroom [1], Byham [11], and Byham and Pentecost [12].

McConnell [43] describes a one day assessment program in a small company. McConnell [44], [45] and McConnell and Parker [46] discuss the one day "package" assessment program available from the American Management Association (AMA).





Information on the AT&T (Bell System) programs is abundant in the literature. Articles providing general data include Jaffee [35], Jelks [37], and Wikstrom [69].

The Standard Oil of Ohio (Sohio) program is treated in detail in the book by Finkle and Jones [85]. Chapter four of the book contains the overview. This program is also described by Hardesty and Jones [31].

Veaudry and Campbell [65] describe the USAIS assessment center pilot project, while Snyder [124] covers the USAWC developmental assessment program. Information on foreign military programs are found in the USAIS unpublished report of a trip to the RCB [126] and Schmahling's [57] article on the Federal German Navy's program.

## 2. Current Applications

### a. Industry

It is difficult to obtain an accurate estimate of the number of assessment centers in existence, however the literature provides a picture of increasing growth in this area. Pomerleau [53] notes:

. . . AT&T affiliates . . . currently operate over 50 centers throughout the country processing upwards of 10,000 candidates a year at an annual cost of \$5 million . . . contributors to professional journals . . . in the last five years, have written some fifty-four articles and reports describing and evaluating the assessment center method.

McConnell [45] describes the record of a one-day package assessment program:

In 1970, at the end of a five year research and development project, the American Management Association (AMA) introduced a multimedia assessment centre programme . . . in the three years since its original publication, over 150 organizations have used it for assessment of their management development needs.



Byham [11] offered this estimate of assessment center growth, circa 1970:

To my knowledge, twenty companies have been responsible for assessing more than 70,000 candidates in the last ten years, but at least 100 more companies are developing centers or are in an advanced stage of center planning. Many others are "looking into the idea." As an indication of this interest, I might cite the fact that more than 200 company representatives attended conferences on the assessment center method during 1969.

Two articles have been selected to provide detail on current industrial assessment programs. The first concerns a one-day "package program" offered by the American Management Association (AMA). Such a program puts assessment techniques within reach of smaller companies who cannot afford to develop and maintain programs of their own. The article (by McConnell [45]) describes exportation of the AMA program to Europe and is written with a British flavor:

The assessment centre programme consists of 5 basic parts:

Chairman's training--A representative of the organization spends one week at an intensive training programme conducted by Management Centre Europe to obtain all of the knowledge and skills necessary to conduct all phases of the programme within his own organization.

Assessor training--Upon returning to his organization, the trained chairman selects five existing managers to be trained as evaluators in the programme. These managers, once trained, are referred to as assessors. Their training consists of a 28 hour multimedia training course in which they are taught the skills and techniques necessary to serve successfully as assessors. Included in this training is a measuring device to insure their skills are at a level at which they can successfully serve as assessors.

Management simulation workshop--Once the assessors are trained, a management simulation workshop is conducted. This is one day in length and consists of eight exercises. Twelve participants are selected to go through the eight exercises and are observed in these exercises by the assessors. The assessors' role in the workshop is to observe and record the behavior of the participants. Following the one day workshop, the participants are allowed to return to their jobs.



Evaluation meeting--The assessors and the chairman meet following the management simulation workshop to report and evaluate the behavior of each individual observed. This final evaluation yields the report on each individual participant in 12 specific management abilities, overall management ability, and the individual's organizational potential. This evaluation meeting requires approximately 12 hours.

Feed-back--At a feed-back session between the chairman and each participant, the results of the centre are communicated to the participant, compared with his own self evaluation, and specific development plans for the participant are established.

The second article (Byham [11]) describes the most widely used format: the five-day program patterned after the AT&T model. Although the following material was based on the J. C. Penney program, it is generalized enough to typify practices of many of the major firms.

#### Sunday

Six management assessors meet at a conveniently located motel and organize materials for the week's activities. Late in the day, twelve candidates, all of them of comparable rank in the company, arrive and settle in.

#### Monday Morning

Period 1: After orientation announcements the candidates are divided into teams of four, for participation in a management game. Each team is given a limited amount of capital to purchase raw materials, make a product, and sell it. The raw materials are usually tinker-toy parts which can be assembled into a variety of products of different complexity, each of which has a different, pre-specified market value.

The players must first decide how to invest their capital to maximize profits and then organize the purchasing, manufacturing, and selling operations. Assessors observe the players for signs of leadership, organizational ability, financial acumen, quickness of thinking, and efficiency under stress.

Suddenly the players are notified that the prices of the raw materials and the products have been radically changed, requiring drastic redeployment of capital and extensive operational reorganization. As soon as they





have regrouped, these prices are abruptly changed again. The actions the players take allow the assessors to estimate their adaptability.

The game is then halted, and each candidate is asked to write a report evaluating his own performance and that of his fellow players.

Period 2: The candidates are divided into groups of six. While one group takes written psychological tests, the members of the other group are interviewed individually by the assessors. The assessors have been provided with detailed background information on each man, and they use this to probe for evidence of drive, motivation, and sense of self-development. This Assessment Interview, so called, is ordinarily the only exercise in the assessment process that focuses on the candidate's past behavior.

#### Monday Afternoon

Period 1: The testing and interviewing groups are reversed.

Period 2: In two leaderless groups of six, the candidates join in discussion of a promotion decision. Here the candidates play the role of supervisors brought together on short notice by their boss to pick one man from a pool of six for advancement. Each candidate receives the file of one of the men in the pool, whom he is then to "champion" for the promotion. After each candidate has studied his protege's folder, the group meets for an hour's discussion to choose the man it will recommend. Assessors observe the candidates' exchanges in the meeting for signs of aggressiveness, persuasiveness, expository skill, energy, flexibility, self-confidence, and the like.

Alternative exercise: In leaderless groups of six, candidates discuss the 20 most critical functions of a manager and list them in order of importance. (This forces them to think about the qualities on which they are being assessed.) Each group then chooses a spokesman who presents the list and the rationale behind it to the whole group of assessors and candidates.

#### Monday Evening

Each candidate receives material on how best to conduct employment interviews and also the resumé of a job applicant. He studies these for use in one of the exercises on the following day. He may also receive special phone calls--for example, the Irate Customer Phone Call.





## Tuesday Morning

Tuesday morning is devoted to the In-Basket Exercise. This simulates the experience a candidate would have if he were suddenly and unexpectedly promoted a grade or two and arrived at work one morning to find his in-basket full of unfamiliar material typical of the sort he would then have to handle. He is instructed to go through this material and deal with the problems, answer the inquiries, request additional information where he needs it, delegate tasks to proper subordinates, and generally organize and plan just as he would if he had actually been promoted.

## Tuesday Afternoon

Period 1: The candidates conduct the employment interviews for which they prepared the night before, each interview taking place in the presence of an assessor. The applicants are college students who have been especially trained in the applicant's role. The interview itself lasts roughly half an hour, after which the applicant leaves and the assessor quizzes the candidate to determine what insights he has obtained about the applicant.

Period 2: The next exercise is the resolution of disciplinary cases. In groups of four, candidates decide how to allocate their time between three such cases and then decide the cases themselves, within one hour. This exercise provides the assessors with information on a candidate's appreciation of personnel problems and his sensitivity to subordinates' views of events and actions, as well as insight into his behavior within a group.

Alternative exercise: The candidates are assigned roles as city councilmen who meet to allocate a \$1 million federal grant to the city departments. Each "councilman" interprets a briefing document provided by a city agency--the police department, sanitation department, water department, and so on--and tries to get as much of the grant allocated to this agency as possible. Again, effective discussion is limited to one hour.

## Tuesday Evening

Detailed data on a company was provided to all the candidates. Each is asked to examine its financial and marketing situation from the viewpoint of a consultant and to prepare a written recommendation for its board of directors on the future expansion of a particular part of its product line.

At the same time, also in preparation for the next day's activities, the assessors study the results of the candidates' In-Basket tests in detail.



## Wednesday

Period 1: Four groups are formed, each consisting of three candidates and an assessor. Each candidate takes his turn presenting his oral analysis of the company data studied the night before and submitting written recommendations.

Period 2: These three candidates work together for an hour to reconcile and consolidate the recommendations.

Period 3: The In-Basket Interview follows, in which an assessor discusses with a candidate the various actions he took. This further defines each man's grasp of typical problems and opportunities.

## Wednesday Afternoon

In a final group session, the candidates rate each other and ask any questions they may have. They then leave for home.

## Wednesday Afternoon to Friday

The assessors discuss the candidates and prepare their ratings and reports.

Throughout all the exercises, the assessors have been rotated so that as many as possible have had a chance to observe each candidate closely. Thus, in these discussions, the assessor who conducted Jones's personal interview summarizes his background and his own impressions of his behavior in the interview; next the assessor who checked what Jones did in his In-Basket Exercise and interviewed him on it presents his impressions; and so on. Each assessor attempts to keep these descriptions nonevaluative and objective.

Only when all the assessors who have observed Jones have spoken does the group begin to judge his behavior from the viewpoint of his management potential and the directions in which he needs to develop. After they have reached a consensus, they prepare a final report.

Within two weeks a manager who has had experience as an assessor meets with Jones to communicate the results. In this meeting he lays stress on the areas in which Jones needs to develop himself and encourages him to set appropriate goals.



## b. Military

Four sources have been selected to provide samples of widely divergent military programs. The first, Snyder [124] describes Inventory and Assessment at the United States Army War College (AWC). Although this program is atypical of the assessment programs described thus far, it is of interest because it is purely development-oriented. Instead of a tightly scheduled program of a few days duration, the assessment is interspersed throughout the academic year (September - June). Another difference is that faculty coaches or counselors replace the assessors previously described. Each coach is assigned 15 students to counsel throughout the school year. The program employs five assessment techniques, e.g., Baseline, Inventory, Optional Personal Inventory, Professional Self-Assessment, Experiential Assessment, and Value-Gained Inventory. They are described as follows:

(1) Baseline Inventory. A questionnaire is mailed to the student prior to his arrival at the AWC. The student indicates his competence in a variety of areas related to the curriculum and returns the questionnaire, whereupon the results are compiled. Feedback is provided which shows the class range and mean on each item. In this way, the student and the school can tailor individual curricula to best advantage. Future plans are to include additional instruments in this phase, such as: the Graduate Record Exam, to assess academic potential, and other tests for reading comprehension, listening comprehension, writing skills, etc.





(2) Optional Personal Inventory (OPI). Research on executive development is said to identify a need for reassessment of personal and professional goals which occurs when an individual is about age forty and two-thirds of the way through his career. The OPI was designed to meet this need. A battery of tests is available to the student which can be administered and analyzed by his faculty coach. The battery includes measures of speaking, reading and writing abilities, attitudes, personality traits, needs, vocational interests, etc..

(3) Professional Self-Assessment. This item provides feedback in three ways: first, to the student, second to the instructor, and third to the institution. The need for such a feedback system is underscored by the fact that the AWC does not utilize an academic grading system. The self-assessment consists of a final examination administered to the students after which they are provided with solutions to enable self-grading. The unsigned exam papers are then given to the instructor for analysis by him and the institution.

(4) Experiential Assessment. A group problem-solving exercise is conducted by a team of students lead by a faculty coach. Upon completion, exercise performance is critiqued by a panel of experts. Each student is provided feedback on his performance by the faculty team-leader, his peers and the panel of experts.





(5) Value-Gained Inventory. Essentially, administration of alternate, but equivalent, forms of the Baseline Inventory at the end of the academic year. Statistical analysis would be utilized to determine statistically significant changes. Results could then be provided to students and faculty, and also used in curriculum development.

The AWC program was initiated in academic year 1973 - 1974, therefore it is too early for an evaluation, however, the implications for the Naval Postgraduate School (NPS) are obvious and would suggest a close and continuing follow-up.

The second military application to be considered is the pilot assessment center project at the United States Army Infantry School (USAIS), Fort Benning, as reported by Veaudry and Campbell [65]. This program is patterned after the "AT&T model" and entails three days of intensive assessment. There are actually three separate programs: one for senior noncommissioned officers (NCOs), a second for lieutenants, and a third for captains, however, they follow the same basic philosophy and share many of the commercial instruments, e.g., paper and pencil tests, inventories, etc.. The programs are based on the "Leadership for Professionals" study conducted by the Army War College. Ten exercises were designed for each program, and combined with batteries of paper and pencil tests. The resulting assessments include writing exercises, in-baskets, leaderless group discussions, war games, field exercises, simulations of organizational problems in the field and three types of interviews.



Evaluation reports consist of numerical ratings and narrative profiles describing candidates' strengths and weaknesses. The narrative profiles include a one page summary of abilities and an eight to twelve page detailed description based on the observations of the assessors.

The pilot assessment center project was chartered for one year and given the following missions:

Test the assessment concept as a leadership and career development technique.

Test the assessment concept as a precommission screening device.

Determine the feasibility and applicability for Armywide use of the concept and techniques developed under the first two steps.

As with the AWC program, the assessment center project has significance for the Navy and warrants close scrutiny.

The British Royal Commissions Board (RCB) is one of the oldest military assessment programs in continuous operation. The USAIS Assessment Center Project trip report [126] provides the following overview of the RCB:

The RCB . . . has the mission of selecting candidates with the potential qualities of character, ability and leadership necessary for a career as an officer. All candidates for either Short Service, Limited Service or Regular Commissions must be evaluated by the RCB prior to any pre-commissioning training (Sandhurst or University course).

The RCB has a President (Major General), three Vice Presidents (Brigadiers), a Training Officer (LTC), (and twelve assessors) (six Lieutenant Colonels and six Majors), all assigned on two year tours. The Board has the capability of assessing 48 candidates each week, organized into 6 groups of 8 each. Each group, therefore, is directly supervised by a Major, whose principal function is detailed observing, and a LTC, whose functions include observing and conducting in-depth interviews of each of the 8 candidates.

Although there is no permanent psychologist assigned to the Board, the Board draws on the professional advice



of psychologists assigned to the Army Personnel Service, and a civilian firm of consultants. In addition, each group of candidates receives an educational/intelligence rating from an Education Advisor attached to the RCB from the Army Education Board.

The criteria used for evaluating each candidate are (1) Training Potential, (2) Applied Ability, and (3) Character. Within each major criterion, the following facets are considered:

(1) Training Potential

- (a) Officer intelligence rating (IQ)
- (b) Educational standard
- (c) Self-expression (written and oral).

The Training Potential is assessed by the Education Advisor, based on records (achievement vs. opportunities) and tests conducted at the RCB. The candidate's overall rating is given a numerical value as follows:

<u>Strong</u>	<u>Good</u>	<u>Adequate</u>	<u>Limited</u>	<u>Weak</u>
10,9	8	7	6	5,4,3,2,1

(2) Applied Ability

- (a) Planning ability
- (b) Practical ability
- (c) Physical ability.

(3) Character

- (a) Coolness (ability to relax)
- (b) Initiative
- (c) Sense of urgency
- (d) Determination
- (e) Military compatibility
- (f) Sense of responsibility
- (g) Sense of awareness (breadth of knowledge)
- (h) Liveliness
- (i) Dominance
- (j) Quality of character
- (k) Range of personal relations (ability to mix).

The schedule for each session is divided into Parts I and II. Due to the large number of candidates, it was felt necessary to establish an initial screening process to reduce the number of candidates down to 48 for the actual assessment. The schedules are as follows:





## PART I

### Monday

Intelligence test  
Current affairs  
Essay  
Interviews  
Evaluation of reports

### Tuesday

Part I Board sits  
Eliminated depart

## PART II

### Tuesday

Group discussion  
Group task  
Group race  
Interviews

### Wednesday

Written projects  
Individual tasks  
Obstacle course  
Lecturettes

### Thursday

Group race  
Final Boards  
Results posted

The Majors and LTC's are rotated each session to prevent bias, and their recording of information is done independently. The Major simply observes; he does no interviewing, neither does he see any written reports or references on the candidates. In addition to observing, the LTC conducts interviews in depth, but also does not see any reports or references. A preliminary finding is determined after the first day with the Brigadier reconciling the differences between the Major and the LTC. The reports and references have been previously studied and graded by the Brigadier.

Based on the preliminary findings (Straight up, Doubtful up, Doubtful, Doubtful down, Straight down), the President of the Board will then conduct his own interviews, observe candidates as they (perform) executive leadership "tasks," and attend those final boards he feels are critical. The Brigadier makes the final, overall assessment rating, subject to the approval of the President. The rating is either Pass, Fail or Return; with copies forwarded to Sandhurst and the Ministry of Defense. Historically, the Board's pass rate has been some 19 percent for Sandhurst (Regular Commission) candidates, 11 percent for Limited Service candidates and 15 percent overall.

The final military assessment program to be described is the recently discontinued Staff Officer and Selection Course of the Federal German Navy described by Schmähling [57]. This six-week assessment program was in existence from February, 1959 to December, 1973. During its fifteen years of operation, 2287 officers underwent assessment.





The basic objective of the program was selection of Staff Officers. In 1966, the selection category of Admiral Staff Officer was added. The criteria used consisted of three sets of variables pertaining to personality, mental ability and problem-solving capability. It became evident that personality traits were poor predictors and the program was finally based entirely on assessment of mental abilities.

As of 1968, an overall score has been obtained by combining scores from eight items, each with equal weight. These eight items include: four written tests, three essay-type exams, a term paper, four oral tests, two in-basket simulations, a war game and an oral presentation. During the years the program underwent constant refinement, and efforts were made to control for bias due to the differing backgrounds of the candidates. Tests were selected and designed to afford responses from different levels of candidate experience and sophistication. Emphasis was on methodology vice recall of previously learned knowledge.

Despite the fact that the program was selection-oriented, a number of developmental effects were noted. For most officers, the return to academic pursuits after years of operational service was a challenge. Another stimulus was provided by the high standard of performance demanded and obtained which produced a wholesome competition between candidates. A third factor was the knowledge that assessors were ever-present and observing every nuance of the candidates' performance.



The only requirement cited for assessors was that one assessor for each group of ten candidates had to have completed Admiral's Staff training. Thus, assessors typically possessed broad operational experience and were expected to have a sense of responsibility for their fellow officers and the capability of making pragmatic decisions. The practice of multiple assessment was seen as easing the burden of responsibility for the assessor and increasing the candidate's confidence in the final rating.

With few exceptions, the candidate received only the final result upon completion of the course. Two reasons given for this practice were to save time and to prevent weak candidates from giving up midway through the program. (This writer does not consider either of these very compelling and speculates that the organization had other reasons for withholding feedback). Schmahling asserts that the lack of feedback was rarely criticized but that many candidates felt that past performance evaluations should have been considered in the final rating.

The Federal German Navy program has been replaced by a tri-service assessment center, however, as the author points out, the fifteen years of assessment experience is not lost, but can be profitably applied to the new assessment program.

### 3. Advantages (Support for the concept)

Three articles have been selected which state the most commonly cited benefits of assessment centers. The first is by Ginsburg and Silverman [25] who described the design and



implementation of an assessment program for hospital personnel.

They wrote as follows:

Compared to other forms of personnel appraisal, this method is seen to be more effective because all assessees: (1) have an equal opportunity to display their talents (2) are seen under similar conditions in relevant situations designed to bring out the particular skills and abilities needed for the position or positions for which they are being considered, and (3) are evaluated by a team of trained assessors, unbiased by past association, who are intimately familiar with both the position requirements and the institutional climate . . .

The major contribution of the multiple assessment approach has been the use of situational tests or exercises . . . the application of situational techniques to assessment has reduced the amount of inferences which must be made from the more loosely structured paper and pencil techniques. They provide more positive answers to the question, "Given these traits, how is he likely to behave in a work situation?"

Situational methods also offer the potential of adding greatly to the scope of human characteristics which can be evaluated. Although more expensive and time-consuming to administer than usual appraisal procedures, the need to find ways of evaluating characteristics not covered by the latter is sufficient to warrant extensive experimentation with relatively elaborate techniques . . .

All in all, the center does seem to be predictive of managerial ability. Furthermore, a vital part of the Identification and Development Center is the action which will be taken to increase individual effectiveness. Tailored developmental programs will replace shot-gun attempts at training individuals for increased responsibility.

Expanding on the benefits of development, Slevin [59]

wrote:

The assessment center can serve as a management development tool in two ways. First, the exercise of participating in a center is in itself a developmental experience. The individual gets practice in leadership skills, makes oral presentations, makes hypothetical management decisions and has them criticized, observes himself on a video tape replay of his performance and has other developmental experiences. Research has indicated that the video tape feedback alone has very promising potential for organizational development team building and other efforts (Weber [66]).





In addition, the whole process of the critical and intensive period of self insight that is experienced in a two to three day center is extremely constructive in providing the assessee with information on how to achieve positive change. He is provided with an opportunity to scrutinize his behavior in a critical manner not possible in on-the-job performance, and in a manner that might lead him to understand those behaviors that are most effective and least effective in his managerial capacity.

Second, the assessment center is an excellent place for the formulation of a developmental plan. Executives serving as assessors are currently operating at levels in the organization to which the assessee eventually aspires. They're in a position to evaluate the types of experience and training the assessee needs to reach their level of attainment. At no other time in the assessee's experience with his organization will six upper management executives spend an intensive two to three hours discussing his strengths, weaknesses and developmental needs. At this point, in conjunction with the overall manpower needs of the organization, a developmental plan may be engineered that is specific to the needs of this assessee. This makes obsolete the conception of a standardized developmental approach for all management and provides the unique capacity of a specifically engineered developmental program for each person assessed.

The third article is by Byham [11] who summarized assessment center advantages as follows:

Reports have proved to be remarkably valid. Longitudinal studies of thousands of employees assessed over the last few years indicate that this assessment method is much more accurate than traditional appraisal procedures, and these seem to be the reasons:

- \*The exercises used are designed to bring out the specific skills and aptitudes needed in the position(s) for which a group of candidates is being assessed.

(Note: This facet is commonly referred to as "combating the Peter Principle; since the candidate is evaluated on requirements of the position he is aspiring to--not those he has held in the past. When there is a large difference between these requirements--e.g., promotion from crafts to first-line management--this factor becomes very significant).

- \*Since the exercises are standardized, assessors evaluate the candidates under relatively constant conditions and thus are able to make valid comparative judgments.





\*The assessors usually do not know the candidates personally so, being emotionally disengaged, they are unbiased.

\*The assessors are shielded from the many interruptions of normal working conditions and can pay full attention to the candidates' behavior in the exercises.

\*The procedures focus their attention on the primary kinds of behavior they ought to observe in evaluating a promotion candidate.

\*They have been trained to observe and evaluate these kinds of behavior.

Byham further points out some indirect benefits which accrue from the center, e.g.:

- a. Candidate training
- b. Positive influence on morale and job expectations
- c. Subtle improvement of candidates' understanding of and attitudes toward organizational goals and policies
- d. Assessor training (said to be by far the most valuable "fringe benefit").

As a final argument, Byham tallies his survey of users of the centers:

In a survey of the 20 companies that operated centers, I uncovered some 22 studies in all that showed assessment more effective than other approaches and only one that showed it exactly as effective as some other approaches. None showed it less effective. As I suggested before, these studies exhibit correlations between center predictions and achievement criteria such as advancement, salary grade, and performance ratings that range as high as .64. The companies appear satisfied that they are on the right track.

Byham and Pentecost [12] echo most of the preceding with the following additional observations:

- a. . . . participation in an assessment center stimulates the candidates self-development through self-insight.
- b. Appropriate training and development programs can be organized and, if practical, jobs can be developed to match the particular abilities of available candidates.



The report of a seminar conducted by the Foundation for Research on Human Behavior [112] illustrates the potential impact of face validity on group morale:

It is important that the promotion of a given individual be not only the best selection but also that it appear to other candidates as a good selection. If a candidate is judged highly qualified mainly on the basis of tests, consultants' opinions, and other information relatively invisible to the candidate population, the advantages of promoting him have to be balanced against the possible disadvantages to the morale of the group. (However) if the candidates consider that the evaluation standards are clearly relevant to the job situation, they will tend to accept the results of the evaluations.

Kraut and Scott [41] continue this theme:

But face validity . . . is high for assessment programs. Raters in an assessment program generally come away feeling that it does indeed work. The exercises seem reasonable, and one can make discriminations which appear meaningful.

They also report results of a study which they conducted involving 1086 subjects. The results showed that assessment center ratings correlated highly with two major criteria: (1) promotion to the second level of management and (2) demotions from the first level of management. Both of the criteria were chosen to minimize contamination. Since the assessment objective was selection for promotion to first level management, the authors contended that the criteria selected were minimally contaminated by knowledge of assessment center ratings.

Kraut [40] cites studies by Bray and Grant [10], Wollowick and McNamara [71] and Kraut and Scott [41]. In summary he states:

These studies and many others lead one to conclude that assessment programs have validity in predicting those who will move ahead in an organization. Many of the studies have flaws, but there is a consistent pattern of apparent validity.



He also discusses a phenomenon reported by many studies: that the predictive validity of assessment center ratings improves as candidates are considered for promotions to second and third levels of management. He speculates on the reason for this:

It may be that the performance of first-line managers in this company is heavily dependent on technical skills which the men carry into that level of management (first) and that the power of the assessment center shows up primarily when they are considered for higher levels of management.

In reviewing a previous study by Hinrichs [32], Kraut points out a possible key to the advantage of assessment centers over traditional techniques. He says that observed interpersonal activity was a major contribution in the assessment, but not in traditional selection procedures.

In response to criticisms of "deciding a man's career on two days of observation," he writes: "The assessment center may represent two days more of observation than existed before." Of course the original criticism is fallacious since most assessment results augment rather than supplant performance appraisals and other sources of information used in promotion decisions.

Dodd [18] reports a study from which he draws an interesting conclusion regarding assessment techniques and stereotyping:

The present study offers some hope that, far from supporting conformity or suppressing independence, tests validated against assessment performance, when used to supplement supervisory recognition, could break the hold of conformity on present selection procedures and open management ranks to those who value independence.

The undisputed landmark in the field of assessment center validation studies is the Management Progress Study





of AT&T. No article on the subject can be considered inclusive without paying homage to "The Study." Bray and Grant [10] offer the most definitive article on this study and it is augmented by a series of articles amplifying on it and providing details of other AT&T validation studies.

Bray and Campbell [9] describe a study on the selection of salesmen which yielded a predictive validity of .51 for assessment center ratings correlated to job performance ratings obtained by special evaluation teams.

Campbell and Bray [14] discuss criterion and contamination problems in validity studies. They cite two studies which attempted to overcome these. One was a Michigan Bell study which compared the first forty men assessed and promoted with the last forty men promoted before the assessment program began. The other study, done in the New England Company, compared candidates rated "acceptable" with those rated "not acceptable." In both of these studies the ratings of the assessment center correlated highly with subsequent performance and were superior to traditional selection procedures. The authors make a final important point that predictive validity alone is not sufficient but that acceptance by line management is also needed if a program is to be successful.

Although Cohen and Jaffee [16] don't offer any advantages not previously mentioned, they do make three predictions for the future of assessment centers in government applications: (1) that development will become a more important objective than selection or internal promotion; (2) that future programs





will utilize a greater number of new exercises simulating management situations in government, and (3) that the number of assessment centers in government will increase, as will interest in them.

Miller [50] discusses the nature of potential and intimates that a single job may be an inadequate measure of a man's full potential:

The so-called potential of an individual is not a single ability, but a combination of abilities to perform effectively on a number of specific jobs.

Slevin [59] writes to the same problem and points out the inadequacy of traditional personnel procedures:

Thousands of psychological tests have been developed for the specific evaluation of personality traits and mental aptitudes, but they tend to be rifle shot approaches that evaluate some narrow aspect of executive potential.

He goes on to point out that:

In contrast, the assessment center provides a "broad band" approach to the evaluation of executive potential.

Another point mentioned frequently in the literature is the effect of job assignment on an individual's career.

Miller [50] describes it thus:

The company is apt to place its high potential personnel in more challenging jobs, whereas low or no-potential personnel will be left where they are or reassigned to less responsible positions. Thus they are offered little or no opportunity to display their qualifications for promotion.

Thus, if such assignment is based on valid selection procedures, a good man may be placed in a dead-end job and left to stagnate. Miller refers to this hopeless situation as the "Darwinian theory of natural selection," and points out the hope offered by assessment techniques. Since all candidates compete on an equal basis regardless of current assignment, the "have-nots" are not handicapped.



Pomerleau [53] makes this same point, but carries it further. He points out the "image effect" whereby managers tend to reward subordinates who act like them. This can ultimately lead to disaster, since:

Selecting an individual primarily because he has no apparent weaknesses or because his background and attitudes correspond to incumbent executives often leads to the selection of mediocrities who have no perceptible strengths.

(For a more detailed treatment of this topic, see Senger [58]).

Pomerleau concludes that the assessment center is the solution to biased supervisors' ratings since it:

. . . ensures that the individual is observed and evaluated by a team of trained evaluators unbiased by previous associations, who are familiar with the skills to be measured, the personal characteristics desired, and the environment in which the work is performed.

A major advantage of assessment centers is the relative freedom from charges of bias in selection practices. Pomerleau [53] expresses the situation thus:

Insofar as the assessment center technique is strictly job-related, employing exercises which seek to maximize objectivity, and further, since the concept has never been challenged by EEO (Equal Employment Opportunity) advocates, promoters of the concept may be encouraged.

This point is amplified in an article appearing in the August 28, 1971 issue of Business Week:

Dr. Cabot Jaffee thinks that, since the assessment method is a job sample, it may be a way to avoid charges of discrimination that sometimes crop up over paper and pencil tests. He cites a Labor Department project where he put a group of black and Indian trainees through conventional written tests and then through an assessment center. The conventional tests showed promotional potential in only 15% of them. Assessment found it in 50% of them.



Because of this built-in "anti-bias" factor, the assessment technique may get a boost from a recent Supreme Court ruling. Last March, the court ruled that, when a company uses personnel tests or degree requirements to screen candidates for a job or for a promotion, it must be able to show the connections between its screening method and the job. The court should be satisfied with assessment, since it's based entirely on the job.

Jaffee, et. al. [36] address this subject in depth as does Dunnette [109]. A slightly different aspect of this general topic is covered by Bray [8] who writes on opportunities for women. He concludes that: "The assessment center can go a long way . . . toward opening up greater opportunities for the female employee and bringing about fuller utilization in the shortest possible time."

Despite the sources previously cited, there are some caveats in the field of EEO which must be considered. Bray and Moses [76], in a review of the literature from 1968 through 1970 offer these findings and conclusions:

. . . considerable attention was devoted to developing procedures which would result in similar test performance among racially mixed groups. Generally, none of these approaches have proved to be successful. The attempts to assess and compensate for bias in testing procedures have considered the following aspects: developing "culture-fair" tests; using nonverbal tests; providing special test conditions; providing special test training . . .

The culture-fair fad appears over. One factor hastening its demise was the finding that nonverbal tests did not create additional fairness for disadvantaged group members. Nonverbal tests were initially viewed as approximations of culture-fair tests. Yet one of the few findings that consistently emerges in several studies is that nonverbal tests enhance differences.

Howard [34] provides an excellent conclusion to this section on assessment center advantages with the following summary of possible benefits:





Help with the Criterion Problem--Installation of assessment procedures may force better job analyses and identification of the important criteria for success on a job. Such a rigorous process has been aptly described in connection with an analysis of the job of foreman. . . . Another way assessment centers may help with the criterion problem is by training assessors to evaluate more accurately the performance, behavior, and potential of others. Assessors have been shown to have greater agreement in ratings of different assessee traits. . . ., but it has not yet been demonstrated that assessors will experience a transfer of training in rating subordinates under the unstandardized conditions of the normal work experience.

Training Assessors--Benefits of assessor training have been claimed not only in the form of a partial solution of the criterion problem but through (a) improvement in interviewing skills, (b) broadening of observation skills, (c) increased appreciation of group dynamics and leadership styles, (d) new insights into behavior, (e) strengthening of management skills through working with simulations, and (f) broadening one's repertoire of responses to problems. No well-designed training studies have validated these promises, however; as has been pointed out previously, firms do considerably more management research on selection than on training and development. . . .

Development of Assesseees--Since many exercises, like the in-basket and oral presentations, were used formerly as training exercises, many assume they serve such purposes in assessment centers, even without immediate feedback of results. . . . Again, evidence supporting this training benefit has not been convincingly provided. Claims of increased self-insight. . . have not been evaluated with pretests or control groups, and statements by assesseees that they felt the program was informative and useful for self-development. . . cannot be accepted as firm empirical demonstrations of the developmental value of assessment centers.

Minority Group Selection--Recent government interest in the fairness of selection tests for minorities has stressed that selection procedures must be job related, and the simulated aspects of assessment centers do have face validity in this respect. One study bearing on this problem at AT&T. . . demonstrated that there were highly significant correlations between performance in a one day approximation of the company's longer Personnel Assessment Program and performance in the latter, regardless of race or sex. The research design in this study more closely resembled alternate-form test reliability than predictive validity, however; thus the minority group fairness question for assessment centers is not yet sufficiently answered.





Face Validity--The simulation exercises in particular have high face validity, and the whole process has been claimed to be received favorably by managers, especially those who may be mistrustful of tests. . . . Some assessee questionnaires have also indicated that the majority consider the procedures useful and objective . . . .

Attitude Changes--It has sometimes been claimed that assesseees may change their attitudes in the direction of a clearer understanding of some of the problems facing the managers and the necessity for making some unpopular decisions. . . , but so far the evidence is anecdotal.

In summary, the bonus benefits . . . of assessment centers sound promising but are largely without research support.

#### 4. Disadvantages (Criticisms of the concept)

Hinrichs [32] reports a study, involving 47 Ss, where predictions of management potential obtained from a two day assessment program were compared with predictions obtained by a traditional technique. The traditional technique consisted of decisions made by two experienced managers who were provided with the Ss personnel records. Although the managers were encouraged to contact the Ss supervisors by telephone for additional information, only a few such calls were made. Results of the study showed that the managers' predictions: " . . . were as highly correlated with the assessment center data as were overall ratings from the two-day program, except for ratings dealing with interpersonal behavior." The point of Hinrichs' study--and a criticism of it were made by Howard [34]:

Hinrichs argued from this study that the expensive two-day assessment program may be unnecessary when much of the same information can be obtained so much easier. Interpersonal relationships seemed to be a relatively untapped area in the traditional system, however. Dunnette . . . [82] . . . also disputed Hinrichs' conclusions in that his correlation of .46 still left nearly 80 percent of the assessment ratings' variance unaccounted for.



To this writer, the real test would seem to be how well personnel records or performance appraisals vs. assessment ratings can predict future management performance, not how well personnel records can predict assessment ratings.

Another critical article is that by Wilson and Tatge [70]. Their main thesis parallels that of Hinrichs, e.g., that other instruments (paper and pencil tests, clinical and patterned interviews, and interpretation of performance records) can rival assessment center results at a much lower cost, stating that:

In the writers' opinion, there is simply no available or published evidence to support claims of the significant superiority of the centers over traditional methods.

Although the authors challenge many claims made for assessment centers, they fail to offer any evidence to support their challenges. Like Hinrichs, they conclude that the greatest benefit of assessment centers is for early identification when there is no performance record to provide an alternative evaluation.

Odiorne [98] comments on a study of the AT&T program done on a sample of 500 managers some of whom had not been assessed and some of whom had received various ratings at the assessment center.

This doesn't prove validity since, as Bray and Campbell report, the assessment center is rarely overruled, and that is what it proves . . . A high assessment center rating seems to be itself a criterion for success, not a predictor of success.

This was a valid criticism of the program in an operational environment, but it completely ignores other studies which controlled for such contamination. Bray and Grant [10] describe one:



The Bell System's Management Progress Study (Bray, 1964) offers a unique opportunity to study the assessment process . . . The uniqueness of the study from the standpoint of studying the assessment process arises from several aspects of the study design:

1. There is no contamination by the assessment results of the subsequent criterion data. Along with all other information collected on the 422 subjects of the study, the assessment data are being held in strict confidence. Thus the judgements of the assessment staff have had no influence on the careers of men being studied.

The other assessment problem cited by Odiorne was the effect of a rating of failure on an employee's later performance. This is spoken to by Kraut and Scott [41]. They found that the lowest rated group of candidates had a mobility rate one-half to two-thirds that of the total and therefore concluded that a poor assessment will slow promotion but not necessarily deny it.

As with the previous section, Howard [34] provides a succinct and comprehensive summary of the field as follows:

The Crown Prince or Princess. Those who do outstandingly well in assessment centers may find that they have become a crown prince or princess. Management may treat them so well that their future success becomes a self-fulfilling prophecy, the morale of those without royal status may decline, and the validity coefficients for the assessment center process may become inflated. No research has substantiated these potential coronation effects, however.

The "Kiss of Death". A candidate who does poorly at an assessment center may feel that he has been given the kiss of death as far as his future with the company is concerned. This could result in some undesirable attrition, since the candidate may be quite competent in the job he is now performing. Research on turnover of assessees so far has been inconclusive.

Stress. If a candidate gets the impression that his entire career is on the line based on a few days "on stage," the stress effects could be quite strong. It would seem important that the data from the procedure not be made of the pass-fail variety or kept too long in an employee's file. On the other hand, defenders of the procedures reply





that since stress is a typical part of a manager's job, a candidate should be stressed to see how he copes with it. It would still seem important to keep stress in the exercises with limits.

The Nonnominee. The feeling that an individual may be part of the "out group" if he or she has not been selected to participate in the assessment process (which may become a status symbol) is another dimension of employee attitudes that needs to be empirically tested.

The "Organization Man." Some have raised the issue of whether or not assessment centers may not proliferate the model of the conforming organization man and serve to eliminate the unusual or imaginative managers that are believed to be needed in the future. A study at Sohio showed that assessments correlated negatively with conformity for one small sample, however. . . . An IBM study indicated that supervisors may nominate those higher on conformity and lower on independence, but that the assessment procedure itself does not select this type of individual. . . . The organization man may be the other side of the nonnominee problem; the most able and not the least able may be denied access to the assessment center. The implication is that it is the nomination procedure and not the assessment procedure that creates the organization man syndrome. The supervisory nominations should perhaps be supplemented by self-nominations, peer nominations, personnel records, or assessment of everyone at a job level if numbers are not too large.

Costs. Estimates of costs have ranged from the price of a few meals to \$5,000 per candidate, exclusive of staff salary. . . . Installation costs are the highest, but to these must be added assessors', assessees', and psychologists' time, travel, accommodations, and meals, plus materials, from rating sheets to videotapes. Various cost saving devices might include completing all possible procedures before arrival at the center, conducting exercises on company property over weekends, and combining small companies with similar jobs in a multiple company center, perhaps in a synthetic validity paradigm. In the end, these costs must be weighed in the context of current selection ratios against the possible gains in selection and training in some kind of a utility model.

In summary, the possible negative outcomes of assessment centers, have much the same status as the (benefits), they appear reasonable, but for the most part they lack supporting data.





## 5. Design Considerations

This section will review those factors seen as relevant to the design of an assessment center. In this area, Finkle and Jones [85], the Foundation for Research on Human Behavior [112] and Olmstead, et. al. [122] are the most pertinent and comprehensive references.

### a. Dimensions to be Assessed

The three sources just cited cover this topic quite thoroughly. Miller [50] and Kraut [40] offer general comments on how to ascertain relevant job dimensions. Kraut offers some particularly cogent advice:

Most assessment programs are not based on an empirical study of the manager's role, as might be done through careful job analysis or a critical incident study. At best, they are based largely on a review of the research literature and the judgment of executives in the organization as to what makes for an effective manager. At worst, they tend to be copies of programs in other companies.

Helme et. al. [114] describe the development of a combat simulation, and Krumm et. al. [118] writes on a research project to explore tactical military decision making. Although these articles are quite narrow in scope, they both deal with designs of military simulations and should be of some value to an assessment program designer.

### b. Number and Character of Assessments

Several sources in the field suggest that more than one assessment of an individual is needed during a career. The basis underlying such a concept is outlined in Hall's paper [30] "A Theoretical Model of Career Subidentity Development in Organizational Settings." Hall defines career subidentity



as: " . . . the person's conception of himself in his career role." He goes on to explain that subidentity (occupational) selection " . . . is not simply a matter of selecting a role but also one of choosing an aspect of one's self which is potentially effective and highly valued." He underscores the importance of this decision by pointing out that:

. . . the career subidentity grows at an enormously faster rate in the first year than in subsequent years . . . the early years undoubtedly represent a critical period for learning and leave a lasting imprint on the person's attitudes and aspirations. The expectations and standards internalized at this time will probably be enduring.

These comments indicate a need for accurate assessment at the point of occupational selection (career entry).

Hall then introduces the concept of career development which he defines as a " . . . spiraling combination of career choice, subidentity growth, and commitment." He emphasizes the difference between occupational choice and career choice, explaining it as follows:

Occupational choice, the choice of a career role, is made but two or three times in most lifetimes, while career choice, any choice which will affect one's career development, can occur continually.

He points out that:

. . . this focus on postselection career development represents a departure from the usual psychological concern for occupational choice--the process of choosing a career role congruent with characteristics of the individual.

These latter comments indicate that the need for assessment does not end once the occupational choice is made, but continues to exist as a result of the career choices which "can occur continually."



Pomerleau [53] expresses the same basic concepts in a more pragmatic way:

When we speak of an "identification system," we need to be reminded that it has two subsystems: (1) Early identification of high potential (EIHP) and (2) Identification of higher potential within the midmanager ranks. Fundamentally, the first subsystem asks: What could the raw candidate, devoid of any meaningful performance record beyond academic achievements, do, given the opportunity to perform in challenging tasks? The second subsystem asks: What has the midmanager done so far to distinguish himself? Our source of data can be culled from job performance, experience, developmental assignments, supervisor appraisal, etc., and then determine what kinds of plans could be mapped out for him to realize the full measure of his managerial potential.

Slevin [59] has a slightly different view of the concept and is the first to specifically describe the "assessment center approach:"

The assessment center is conducted in the usual fashion with an emphasis on both evaluation and the diagnosis of developmental needs. These two variables may then be fed into an overall manpower plan. This plan takes into account the environmental demands on the firm and the projections of future manpower needs in various areas. Based on his own competence and what his developmental needs are, an individual will be plugged into two plans: a promotion program that is specifically constructed for the individual, and a management development program. The promotion program specifies a career path that the individual is likely to follow in the organization. The management development program focuses on the difference between the individual's current competence and future needs as defined by his tentative career path. Using both the promotion and management development programs, the organization can implement an effective and farsighted manpower plan.

The assessment center is probably the best example of a successful "broad band" approach. Because it is able to fill both organizational appraisal and developmental needs, the assessment center is likely to flourish as we prepare our organizations for the 1980's.

Miller [50] makes one of the most explicit statements on the subject:





Moreover it is an error to assume that an individual's capacity for promotion to the next higher level or to jobs several levels higher remains constant. Job requirements change, organizational goals and demands shift, and an individual's personal qualifications are likely to change with time; hence his potential for promotion to various jobs will vary in time. Therefore potential must be periodically reassessed.

In conclusion, Hinrichs [32] summarizes the diverse objectives of an assessment program as follows:

. . . one hopes the assessment program will be able to identify promotable people earlier in their careers, that it will help to clarify some of the skills important in promotion, and that it will perhaps identify some people who should be promoted but who might, under normal circumstances, be overlooked. Hopefully, also, the program will fulfill, to some extent, a personal development function by providing practice in group situations, individualized feedback regarding observed strengths and weaknesses, and greater understanding regarding the caliber of the competition participants are up against.

#### c. Uses of Results

The output or result of the assessment process can be utilized in several different ways. This is not to imply that a single program could meet all of the diverse objectives, for some of the objectives are in conflict, e.g., selection usually calls for stable variables to be measured, while unstable variables are the focus of developmental programs. Because of this, it is important that objectives (primary and secondary) be specifically delineated before the program is designed, to ensure highest efficiency.

Finkle and Jones [85] cover this topic most thoroughly in Chapter 15 of their book. They identify the following uses:

- Selection decisions
  - Hiring
  - Firing





Transfer and placement  
Organization requirements  
Individual requirements

Management development

Organizational planning

Counseling and consulting

Additional uses suggested by Culclasure [108], are career motivational prediction and selection. Although his study failed to develop predictors, he wrote:

Available evidence, however, suggested that a career motivation screening procedure could be developed . . . Such a procedure would employ (a) those portions of the Strong Vocational Interest Blank (SVIB) which have been shown to have moderate validity (0.25) for predicting Naval officer retention when scored with the Navy Officer Key, and (b) a revised version of the Importance-Possibility Scale.

Helme, et. al. [114] also address military assessment applications as follows:

Early identification of officer leaders and development of officer leadership from cadet training through company and field grade assignments are of major concern in the management of the Army's manpower resources. The Behavior and Systems Research Laboratory (BESRL) conducts research to provide scientific means of identifying individuals with good leadership potential for officer training, selecting officers for commissioning, and evaluating their performance. The present series of publications records the conduct of a long-term experimental program to improve the basis for selecting and developing officer leaders in accordance with their capability to meet differing leadership requirements. Differential prediction and evaluation have become dominant objectives in the effort to channel officers into appropriate assignments and develop their potential so as to make best use of their abilities.

As mentioned previously, a single assessment program is realistically confined to one or two objectives. This is illustrated by the fact that studies of operational assessment centers rarely address more than two objectives. The following examples are offered.



Miller [50] cites selection and identification; Pomerleau [53] stresses identification with a secondary function of development; Slevin [59] says essentially the same thing, stating: "No two problems are more crucial in today's changing organizations than effective management appraisal and development." Kraut and Scott [41] describe a combination of assessment and development:

The assessment program consists of two and one half days of assessment activity patterned after the AT&T model, plus two days of purely developmental activity . . . The development portion includes lectures, seminars, and classroom discussions, as well as a feedback interview.

Jelks [37] makes an important point regarding the use of assessment center information:

The program is not designed as a final judgment factor in the selection of management personnel, nor does it replace the supervisory appraisal of current job performance. It simply makes one more piece of information available that can be fitted into a record of employee performance.

Kraut [40] makes the point just stated, and another, equally important one: "The data should . . . be discarded for any decision making purpose after two years or so." Interviews disclosed a similar policy at Pacific Bell Telephone with a figure of about three years mentioned as a maximum "life" of data for selection purposes. In contrast, Finkle and Jones [85] cite a period of "five to ten years, or longer."

The final source in this section makes a prediction on the future uses of assessment centers. Bray and Moses write:

Byham's . . . [11] . . . review of personnel research activities indicates a growing interest in developmental and placement strategies rather than on selection per se.



After deciding on the objective(s) of an assessment program, the designer next faces a myriad of decisions. The more basic of these will be arbitrarily lumped together and considered in the next section.

#### d. Basic Considerations

Three factors considered basic to assessment program design will be reviewed. These factors are: (1) "Signs vs. samples," (2) Stable vs. unstable variables; and (3) Statistical vs. clinical combination of assessment results.

##### (1) Signs vs. Samples. Bray and Moses [76] write:

Wernimont and Campbell . . . [67] . . . argue that tests and other predictors should be used as samples rather than signs of behavior. In other words, the measures we use to predict should be measures of behavior.

Howard [34] seconds this view by noting that:

A unique contribution of assessment centers is the inclusion of situational tests in the assessment battery. The rationale behind using such exercises is that they simulate the type of work to which the candidate will be exposed and allow his performance to be observed under somewhat realistic conditions. Contrary to the aptitude test approach, samples, not signs of behavior are used for prediction.

Wernimont and Campbell [67] contend that samples are superior to signs in the following ways: (a) less bias due to faking and response sets; (b) less discrimination in testing because samples are more relevant and fair than signs; (c) less invasion of privacy with samples. As to the relative effectiveness of "signs vs. samples," Bray and Grant [10] stated that:

The data reported make it apparent that the situational techniques (group exercises and In-Basket) used in the Management Progress Study produced, despite their complexities, reasonably reliable results and that they markedly influenced the judgments of the assessment staffs. The paper-and-pencil instruments (signs) had less influence on staff evaluations generally, though they did influence them in many specific ways.





Wollowick and McNamara [71] refer to the preceding source and speculate as to the cost-effectiveness of simulations (samples):

An important question frequently raised (Bray and Grant, 1966) can also be partially answered from these (Wollowick and McNamara's) results. That is, can the assessment procedure be justified in light of its additional cost and time compared to the use of paper-and-pencil tests alone? . . . Inclusion of the elements unique to the assessment center procedure . . . nearly doubles the criterion variance accounted for. This indicates that the assessment procedure makes a substantial unique contribution to the prediction of management success.

(2) Stable vs. Unstable Variables. The consideration given to this question in the design of the Sohio program is described by Finkle and Jones [85]:

. . . the emphasis in the program at Sohio was on the development of information that might be expected to be reasonably stable and consistent over some period of time, perhaps five to ten years or longer. Studies have been made as to the degree to which measurements and judgments of abilities, interests, attitudes, and values of individuals tend to change over time. It seems appropriate, in establishing a group of basic abilities and characteristics, to make use of available studies, general experience, and common sense to eliminate from consideration variables that are highly vulnerable to change during a relatively short period of time.

However, this approach clearly presupposes that the program will establish less information pertinent to training and developmental plans than might otherwise be possible. Immediately the question arises: Is it not possible to do both, namely evaluate some characteristics not likely to change and others more likely to? The answer, of course, is "yes." Both approaches could be taken, but the orientations are essentially in conflict. Our emphasis in Sohio was placed on stability. It was not planned to reschedule the elaborate assessment procedures of this sort in any short period of time since it was felt that it was important to be as fully aware as possible of more permanent characteristics when making manpower decisions, particularly those of a long-range nature.

(3) Statistical vs. Clinical Combination of Assessment Results. Bray and Grant [10], in describing the AT&T Management Progress Study assessment program, make a rather one-sided statement:





Assessment procedures also contrast with psychometric ones in the way the resulting data are combined. Psychometric approaches depend on mathematical methods for accomplishing this purpose whereas assessment approaches combine the data judgmentally.

Taft [61] is more objective on this point and offers an excellent analysis of both sides of the question:

We have argued that there are occasions when intuitive methods of making predictions, i.e., "clinical" have their appropriate place. Statistical methods cannot be used where no prediction formula exists. But some personality assessors speak as if the clinical method is always to be preferred as it enables the assessor to be flexible in his use of the data in a way that is not possible with statistical techniques; for example, the clinician can give weight to obvious but rare and nonrepeatable factors in the subject's current situation which could not be validated empirically. Other advantages claimed for the clinical against the statistical approach are that it does not violate the essential unity of the subject's personality, and that it enables the use of empathy and recipathy in making the predictions. (Actually these subjective clues could also be used as data by the statistician along with other more objective data.)

Other assessors regard clinical techniques as only a last resort. A number of advantages can be quoted for statistical prediction over clinical, most of which boil down to the fact that the statistician has a far more efficient memory and a larger attention span than the clinician; he can "remember" the relevant data at the appropriate time and combine them with other data in order to obtain optimal weightings for future predications.

And so we have, on the one hand, the efficient but rigid and inhuman statistical prediction, and on the other, the flexible and humane but inefficient clinical. Which one is more useful in personality assessment?

The choice of method will depend on both the requirements and the over-all situation, including sometimes, public relations considerations. The final selection of assessment techniques is likely to be a mixture of both subjective and objective, but the circumstances that will favor one or the other at any stage are rather vague, and the choice is usually made on subjective grounds, although it, too, could be made on the basis of objective, empirical investigation. In general, objective methods are to be preferred as far as possible as they maximize accuracy, but practical considerations of economy, convenience, and the limitations of the situation, dictate the wholesale use of subjective methods in personality assessment. These subjective methods may



have high validity under favorable circumstances, and where the assessors are familiar with the criterion situation, clinical judgments may actually be more accurate than any objective methods are ever likely to be in predicting to criteria.

Wollowick and McNamara [71] report an interesting finding from their study:

The subjectively derived combination of the variables (overall rating) correlated .37 with the criterion, while the statistical combination gave a multiple of .62. This suggests that instead of deriving an (overall rating) by subjective mean(s), it might be done more profitably by a statistical procedure. This should greatly increase the predictiveness of the program.

Meehl [96] makes a very positive statement on the issue as he summarizes a number of studies on this subject:

In spite of the defects and ambiguities present, let me emphasize the brute fact that we have here, depending upon one's standards for admission as relevant, from 16 to 20 studies involving a comparison of clinical and actuarial methods, in all but one of which the predictions made actuarially were either approximately equal or superior to those made by a clinician. (*Italics are Meehl's.*) Further investigation is in order to eliminate the defects mentioned, and to establish the classes of situations in which each method is more efficient.

Lest Meehl's position be misconstrued by quoting him out of context, his "thesis in a nutshell" is quoted:

There is not convincing reason to assume that explicitly formalized mathematical rules and the clinician's creativity are equally suited for any given kind of task, or that their comparative effectiveness is the same for different tasks. Current clinical practice should be much more critically examined with this in mind than it has been.

One final viewpoint on this subject is offered. Howard [34] cites yet another study, and makes some suggestions for future assessment programs:

Again we find a demonstration of the usefulness of clinical measurement but the superiority of mechanical combination of data . . . (Sawyer [56]). Although one study cannot be generalized to all assessment centers,



it certainly appears advisable for other centers to research the hypothesis that mechanical combination of data may improve predictions even more. Should this prove true, once research costs were recovered, the unit cost savings of reducing assessors' time could be substantial.

#### e. Instruments and Techniques

The designer of an assessment program faces a formidable task in the selection of instruments and techniques which will best serve the objectives of the program. Compounding his task is the plethora of commercial instruments vying for his approval.

Albright et. al. [73] offer a relatively brief but comprehensive coverage of "the use of psychological tests in industry." Bray and Grant [10] provide an overview more relevant to assessment programs with their listing of the instruments included in the Management Progress Study:

The methods used for collecting information on the personal characteristics of the participants are representative of those used generally in assessment activities. A listing of the techniques with a brief description of each follows:

Interview. A two-hour interview with each man directed at obtaining insights into his personal development up to that time, work objectives, attitudes toward the Bell System, social values, scope of interests, interpersonal relationships, idiosyncrasies, etc..

In-Basket. A set of materials which a telephone company manager might expect to find in his in-basket. The items, 25 altogether, range from telephone messages to detailed reports. In addition, examinee was furnished with such necessary materials as a copy of the union contract, organization chart, and stationery. He was given three hours in which to review the materials and take appropriate action on each item (by writing letters, memos, and notes to himself). Following completion of the "basket" he was interviewed concerning his approach to the task, his reasons for taking the actions indicated, and his views of his superiors, peers, and subordinates (as inferred from the materials).





Manufacturing Problem (made available by John Hemphill of the Educational Testing Service). A small-business game wherein the participants assumed the roles of partners in an enterprise manufacturing toys for the Christmas trade. The participants were required to buy parts and sell finished products under varying market conditions, to maintain inventories, and to manufacture the toys.

Group Discussion. Also a leaderless group situation, focused around a management personnel function. Participants were instructed to assume the roles of managers, each having a foreman reporting to him considered capable of promotion. Participants were required to discuss the merits and liabilities of their hypothetical foremen and to reach a group decision regarding their relative promotabilities.

Projectives. (a) Rotter Incomplete Sentences Blank (published by the Psychological Corporation). (b) Bell Incomplete Sentences Test (by Walter Katkovsky and Vaughn Crandall with the advice and assistance of Julian Rotter). (c) Thematic Apperception Test (published by Harvard University Press). Six of the cards from this test were administered.

Paper-and-pencil Tests and Questionnaires. (a) School and College Ability test, form 1 (published by the Cooperative Test Division of the Educational Testing Service). Annually since 1956 the Personnel Research Section of AT&T has developed, following the Educational Testing Service format, its own version of this test. (d) Edwards Personal Preference Schedule (published by the Psychological Corporation). (e) The Guilford-Martin Inventory of Factors GAMIN (published by the Sheridan Supply Company). (f) Opinion Questionnaire, Form B. Unpublished, this questionnaire, made available to the Bell System by Irving Sarnoff of New York University, is designed to reflect a person's attitudes toward making money and advancing himself.

Miscellaneous. (a) Personal history questionnaire. (b) Short autobiographical essay. (c) Q sort (70 items, self-descriptive).

Another overview can be found in Finkle and Jones [85]. They provide the following informative table:





Figure 7

Suggested Factors Indicating the Value of a Test or Procedure

IMPORTANCE	HIGHER THE BETTER	LOWER THE BETTER
Of critical importance	Relevance Validity (professional confidence)	Unacceptability to assessees
Of considerable importance	Uniqueness Acceptability to management Acceptability to assessees	Time to administer and process Cost in time of management and professional personnel Cost to purchase Cost to develop or improve
Of some importance	Change of pace	Restriction on research

Source: Finkle and Jones [85]

They continue with some additional suggestions to consider in the selection or design of tests:

#### Mental Ability Tests

Beyond the general criteria of relevance, uniqueness, acceptability, and the others already considered, it is helpful in choosing mental ability tests for the assessment program to seek ones for which appropriate norms are available. Here we mean tables or statistics showing what would be considered typical, or relatively high or low, scores on the test for persons similar, in whatever quality the test measures, to those to be assessed. Preferably, tests can be used for which norms on managers or executives in business are available. Such information can usually be obtained through test publishers or often by cooperative arrangement with business organizations that have used the test. Later, as sufficient experience is gained, the company with the new assessment program can establish its own norms and standards based on scores of its own personnel.

#### Projective Personality Tests

In projective tests the psychologist is considered to be part of the test. Therefore, the choice and make-up of projective tests should, to a considerable extent, be left in the hands of the clinical psychologist who uses



them. However, it may be well, in choosing the clinical psychologist who will participate in the program, to consider whether the projective tests he prefers to use will prove generally acceptable to assessees and managers in the organization and will be acceptable to other clinical psychologists who may help him or replace him in the program. We doubt, for example, that ink-blot or word-association tests are as acceptable in business as thematic or sentence-completion tests. And if the sentence-completion procedure is to be used (particularly if one is to be tailor-made for the program), it becomes important to have some assurance that it is acceptable to psychologists other than the one who designed it.

### Multiple-Choice Personality and Interest Tests

This form of testing has been the principal focus of negative criticism of management level testing in business. Accusations have ranged from unfairness, through perpetuation of conformity, to simple ridiculousness. Anyone considering the use of such procedures should obtain good professional counsel since much of the criticism, though so frequently and sensationally expressed as to alienate most professionals, has some basis in fact.

Two characteristics of such tests probably account for most of the criticism leveled at them. First, they rather obviously can be faked. This by no means necessarily results in a distortion that is favorable to the "faker." It does, however, reduce his confidence in the interpretation of the test and therefore in the fairness and value of the assessment process. Furthermore, it may prevent the effective use of the scoring and weighting system originally developed for the test without, at least, a follow-up study to examine the effects of attempted faking on the scoring system that was, in most instances, developed from answers given by persons taking the test experimentally or for counseling purposes. Second, the basis of development and scoring of such tests is actuarial rather than clinical. This means that the choice of items and the scoring system are ultimately based on statistical relationships between actual answers to the questions and one or more other measures such as judgments of performance or personality constructs. This relationship is accepted as an empirical fact and efforts at making a rational interpretation of individual item relationships are usually not attempted or considered relevant. Consequently, anyone judging the contribution of the test by reading and thinking through the answers, or by examining the weights given the answers, may simply miss the mark in evaluating the test.



These characteristics of multiple-choice personality tests point to the importance of a careful examination of their value under conditions of actual use as a means of weighting their contribution against their dubious acceptability. In selecting tests a review of the questions for study can give some clue as to the reaction that can be anticipated by test-takers.

## Interviewing

Interviewing can presumably be called a type of assessment procedure, but there seems to be nearly as many ways of interviewing as there are interviewers. As discussed earlier, arguments can be made for having all interviews in an assessment program conducted by psychologists or other specially trained persons. Other arguments support the value of having managers conduct the interviews within the frameworks of some assessment programs. The Sohio program adopts the latter approach and in fact calls for a constantly changing (from program to program) group of managers to conduct interviews with a minimum of special instruction or training.

Clearly, the value of interviewing under such conditions comes from maximizing the already developed habits of the managers rather than in attempting to change or "perfect" their skills in accordance with some predetermined style or pattern of interviewing. In a brief "orientation" meeting prior to their conducting interviews, the managers are asked to review personal history forms of the four individuals each of them will interview. It is pointed out that these interviews differ from ones they have held in the past in that this time they have no job to describe or "sell." They are encouraged to look for answers in the personal history form that can be used to encourage the interviewee to elaborate on why he did a certain thing such as choose a college, a major in college, a company to work for, or a change of company. They are also asked to point out to the interviewee their unique role as his representative to the assessment committee: How would the interviewee like to be represented? What does he feel he is best suited to do in the company and why does he feel he is so suited? The managers are cautioned that some interviewees may attempt to turn questions back on them and it is suggested that they refrain from describing their own backgrounds and activities until the formal interview is over.

A few sample interview reports from past programs (edited) are presented and it is stressed that their own reports should contain two things: information about the interviewee and their judgment about him from the interview exposure. No pattern is recommended in organizing the report. In fact, one sample interview report is written chronologically from childhood while the other begins with the first Sohio job





and uses earlier experience information to support and elaborate on opinions and judgments about professed skills and interests. The managers are offered tape recorders if they do not wish to write out their interview reports in longhand. This approach, though it is only slightly structured and offers little or no advice on style, has resulted in most instances in the production of effective 1-1/2 to 2-1/2 page typewritten reports.

## Situational Exercises

So far as we know, situational exercises have to be developed or borrowed rather than ordered as published versions through a catalogue. Such procedures can provide either individual or group activity. The overriding objective of the approach is to produce activity based on business-like matters which can be reliably judged by observers or reviewers. It is presumed, though sometimes given secondary attention, that the judgments (or observations) produced can be weighed compatibly with other information to produce meaningful combined judgments helpful in future selection, placement, or developmental decisions. A critical aspect of any situational exercise, therefore, is the realism (in regard to business problems) in the eyes of those participating in it and in the eyes of those judging it. Accordingly with either individual or group exercises, the task provided should bring the assessee as close as possible to realistic problem-solving and should require as little "role-playing" as possible. Observers should be able to hear or observe enough to give meaningful interpretation to what occurs rather than to have to infer what a person is thinking or feeling. Some thought should probably be given to establishing a variety of tasks so that persons with varied backgrounds, skills, and characteristics find opportunity to demonstrate their talents and styles. For example, while one group exercise might call for quick and convincing argumentation based on little specific content, another might call for some quantitative analysis as a prerequisite to discussion, while still another might feature sensitivity to the feelings of others as a basis for appropriate contribution. The exercises might also vary in the amount of preparation allowed in order to contrast planned and rehearsed behavior with impromptu behavior.

In all exercises, the determination and explanation of exactly what the observer is to note and report is quite important. In individual exercises, the observer may examine the results of the exercise (as in the in-basket exercise); he may observe individual performance (as in the presentation of formal talks); or he may actually question the assessee as to why he took certain actions (again, as in the in-basket exercise). In some individual exercises, observations may not be made, but rather scores (or counts) may be obtained





by formula and reported to the assessment committee (as in a stock market exercise developed and experimented with at Sohio).

For group exercises, observers may have specific assignments to concentrate on the performance of one or two of a group of individuals who are engaged in a leaderless group discussion (such as reviewing a case report) or in a simulated work activity (such as a marketing-manufacturing problem). Here the observer may be given considerable or little structure ranging from using a checklist to mark what he sees to simply writing notes about what he sees. Such notes can then provide him with the basis for preparing a written report or for "telling" the assessment committee what "his" assessees did during the exercise.

An observer could, of course, be asked simply to complete a series of rating scales similar to or even identical to the skill and style variables to be used by the assessment committee. However, we feel that this approach has two disadvantages. First, the other members of the assessment committee, who concentrated on other assessees or who did not observe the exercise at all, will have no way of joining in the interpretation and judgment of the performance of the individual being reported on; they must simply accept, or not accept, the judgments of the reporting observer. Second, the observer may, by rating the assessee on the variables solely from observations in one exercise, overcommit himself on each rating prior to hearing evidence from the other exercises and procedures. To offset these possible problems, we suggest that observers be given a checklist or structure that produces broad coverage and descriptions without calling for judgments on the basic program variables. A highly detailed checklist seems advisable only when the observers can be well trained in its use--generally when management observers are expected to remain as staff contributors through several programs.

Though somewhat less important than other considerations, some method of ready identification by observers of all participants at a group exercise fosters better association of remarks with those making them. We have adopted the use of colored vests--other approaches could probably serve as well. Observers otherwise will have no trouble identifying the persons they are assigned to concentrate on--but they might have difficulty in identifying exactly who their assigned assessees are talking to or with in the group--particularly if a couple of the "other" assessees have their backs to the observer. By having each participant in the group exercise clearly identified (from all directions) by color, the observers can merely note interactions by these symbols, and when their reports are later typed, the typists can substitute the correct names for the colors.



One final bit of advice for the designer is offered by Hardesty and Jones [31], e.g.:

In addition to the variety of assessment approaches used in the program, the designers purposely attempted to build-in duplication when possible and to strive for some overlap among and within the assessment approaches in order to increase the confidence they could have in the assessment information.

The remainder of this section will continue to consider specific instruments and techniques individually.

(1) Projective Personality Tests. The best article found on this subject is "Contributions of projective techniques to assessment of management potential," by Grant et. al. [27]. The authors conclude that " . . . projective reports particularly influenced the assessment staff in rating such characteristics as work motivation, passivity, and dependency.

(2) Interviews. A number of pertinent articles have been written on interviews. Grant and Bray's [26] "Contributions of the interview to assessment of management potential," is one of them. They found that: "Analyses of the data clearly indicate that information from the interview reports contributes to assessment center evaluations."

"The validity of personnel interview" by Ghiselli [23] is a brief but worthwhile article. His conclusion states that: . . . "the ordinary personnel interview is not necessarily and invariably invalid, but rather that its validity may be at least equal to, if not greater than, the validity of tests."

Prien [54] reports a study to determine the effectiveness of interview information as a predictor of future



job performance. He concluded that:

Psychologists differentiate individuals through interviews on two general dimensions: Personal Relations Effectiveness and Intellectual Functioning . . .

and

Psychologists can predict the potential job performance of individuals on the basis of information and impressions obtained in an interview. The interview has some validity for the assessment of higher-level personnel.

(3) Simulations/Situational Tests. This category can be subdivided into group and individual tests. Those articles dealing with the entire field will be reviewed first, followed by those on group exercises. Individual tests will be covered last.

Finkle and Jones [85] again offer an excellent treatment which is enhanced by the inclusion of advantages and disadvantages of situational techniques:

This approach consists of one or more standard exercises expected to bring out ability and personality characteristics directly and more obviously related to successful performance in supervisory, administrative, and managerial responsibilities. These exercises may consist of individual tasks, such as writing recommendations about a variety of letters, reports, notices, and so on, typical of the contents of an executive's "in" basket. Or they may require elaborate group activity of six or eight candidates "running" a simulated company or "serving" on a committee. To some degree how well the situations are handled is informative: for example, the best recommendations on the in-basket items, higher profits in running the company, or controlling the committee. There is, however, some question as to whether or not results on these situational exercises guarantee results in a real life situation. Much more important is the picture obtained of the abilities, skills, styles, and personalities of the participants. Such characteristics are noticed as: (1) degree of organization, (2) willingness or reluctance to make decisions, (3) willingness to take action, (4) clarity and impact in communications, (5) awareness and sensitivity to the thoughts and feelings of others (6) impact on group decision-making and (7) approach to problem definition and attack.





The interpretation of these situational activities may vary considerably from a rather intuitive, commonsense, or clinical judgment formed by either psychologists or management personnel as to the significance of certain answers or actions to, on the the other hand, a rather empirically related analysis of the answers and actions as compared with other judgments in terms of ratings, later actions or future consequences. In other words, these techniques may be approached on the basis of the standardized selection techniques, such as regular paper-and-pencil tests, supposedly supported by validation studies against other measures obtained after employment; or they may be judged more as the clinical information is judged by the clinical psychologist.

#### Advantages

- a. The problems and situations used with this approach are designed to bring out characteristics and abilities that seem directly related and relevant to success in the business world.
- b. These techniques involve some important areas, such as interpersonal relations, administrative skills, and communications ability that are not well covered by the other techniques.
- c. These techniques are readily adaptable to administration and use by business personnel as well as by psychologists.
- d. The descriptions of the styles and abilities of individuals as assessed by these techniques are more readily understandable to management personnel making promotion decisions than are some of the descriptions written by psychologists following the clinical approach or scores derived from the statistical approach.

#### Disadvantages

- a. This approach can be relatively time-consuming, depending upon the number of exercises employed. Most exercises take from one to three hours.
- b. There is always the possibility in the group exercises that one individual will look relatively strong or weak in some respects because of the makeup of the particular group in which he is placed. This and the possibility that observers may not be consistent in how they judge and report what they see make the process one of low reliability (consistency).
- c. There is no certainty that performance under testing conditions will transfer to later performance under real conditions, particularly if results on the "correctness" of the answers are considered rather than style.



d. The cost of this technique varies according to the method that has been used for the interpretations of the results.

If the empirical approach has been taken to simply validate some measurable results or actions or answers by comparing them statistically with later judgments such as ratings, promotions, survival, and so on, the cost of administering and directly interpreting is relatively low. However, if the approach taken toward interpretation of the situational or job-sample tests is one of a commonsense review by management as to the adequacy and appropriateness of the actions or performance, or if it is an interpretation by psychologists of personality characteristics, in each of these circumstances it may be quite costly because of the hourly salary of the key individual making the interpretation, that is, either the manager or the psychologist.

e. No matter how this technique is to be judged, it should be employed only after a number of experimental or pilot sessions have been conducted and analyzed.

Parry [52] offers insights into the reasons why simulations seem to be more effective than traditional tests:

The use of games and simulations enables the learner to develop in three major areas. Here are the objectives that apply to virtually all games and simulations.

The participant sharpens his skills of analysis, making judgments and experiencing the immediate consequences of them. For example, he learns to separate relevant from irrelevant variables, establish priorities, identify assumptions, separate fact from opinion, set realistic goals, assign value (i.e., weight the facts according to their relative importance), distinguish between might do and must do, and so on. Let's summarize this objective with the phrase Analytical Thinking.

The participant gains insight into his own behavior as he interacts with others; and he develops sensitivity to the perceptions, needs, goals, management styles--in short, the behavior--of others. To this end, a game might be regarded as a projective device. The participants are caught up in the spirit of the game and play it without stopping to ask, "I wonder what this move will show about my personality? How does my performance in the game relate to my performance on the job?" Once the game is over and these questions come out in discussion, the participant begins to realize that the behavior he projected during the game is, more likely than not, an accurate sample of his behavior on the job. We might summarize this objective with the phrase Insight and Sensitivity.



The participant practices and refines his skills in dealing effectively with others. Broadly speaking, we can divide the work of managers and supervisors into two broad areas: people-handling skills (e.g., communications, human relations, training and developing others, etc.), and task-handling skills (e.g., work simplification, planning, scheduling, controlling, etc.). Both of these elements are present in most games. A successful manager, of course, is effective on both dimensions. In contrast, the new manager tends to be either task-oriented or people-oriented. Thus, we might regard the games as a series of exercises in which each participant can successively develop and refine his mixture of people-handling and task-handling skills. We could use the phrase Skills Practicum to summarize this objective.

These three objectives were brought home very nicely by a participant who remarked, "These games are sneaky. I play them just like I play poker or any other game . . . I play to win, without giving much thought to what 'style' I'm using or what my alternatives are. But then, when we sit down to discuss the games, I begin to see some of the other ways that I might have played them. In fact, I now find myself giving a good deal more thought to my poker game. I guess, in a way, that all of life is a game, and that how you play it is just as important as whether or not you win. We can't all be winners . . . at least not all the time. But we can play a good game all the time."

Greenwood and McNamara [28] report their study on "Interrater reliability in situational tests." Not only did they find acceptably high interrater reliabilities, but, more importantly, " . . . that adequate reliability can be obtained from the use of nonprofessional evaluators in business-oriented situational tests."

Proceeding to articles concerned with group exercises, Streufert, et.al. [60] make the transition with their description of "A Tactical Game for the Analysis of Complex Decision Making in Individuals and Groups." Their simulation was designed to maximize differences in information-processing characteristics. They ascribe the differences found primarily to variations in a personality and environment. This instrument





is briefly described, along with techniques for analysis of results, and information on how to purchase the associated computer program is provided.

Helme et. al. [114] report on "Dimensions of Leadership in a Simulated Combat Situation." This simulation probes different dimensions than the proceeding one. Although it is primarily a report of research, the description of the simulation would be of value to a military assessment program designer. Some idea of the flavor of a combat simulation can be obtained from this excerpt:

After four hours' sleep, the officer was awakened at 2:30 and told to report to MAAG headquarters. The host nation had been invaded with nuclear strikes. His task for the next eight hours was to direct, by radio, four jeep-mounted teams in a reconnaissance of war damage and radiation levels, continually receiving and recording information, transmitting orders to meet emergencies, and making a report of results of the survey to his superior. Of all the technical and administrative tasks, this one was carried out under the most sustained pressure and fatigue.

Jaffee's book [90] contains concise but complete examples of both individual (in-basket), and group (leaderless group discussion and business game) simulations. The examples are complete with scoring check-lists and forms.

One of the sources most relevant to military applications is the report on "Development of Leadership Assessment Simulations," by Olmstead et. al. [122]. This is a detailed description of the design of the simulations currently used in the USAIS Assessment Center pilot project. This work was done under contract by the Human Resources Research Organization (HumRRO) Division No. 4 which is located at Fort Benning. The combination of design philosophy, problems





encountered and their solution, rating, analysis of results and assessor training, make this reference especially valuable as a guide for a program designer.

The in-basket exercise is the most widely used individual simulation and the literature is replete with articles on this topic. The stature of the exercise is illustrated by this quotation from Byham and Pentecost [12]: "However, one exercise, the in-basket, seems to have emerged as the most important exercise of most assessment centers." This view represents a consensus expressed by other writers.

Frederiksen, et. al. [22] provide a description of how the exercise came into being and its early development. Examples of in-basket materials, scoring and validation studies are reported.

The landmark article in the in-basket field is Lopez' "Evaluating executive decision making," [119]. This source covers the entire spectrum from design considerations to application and analysis. It also covers the previously mentioned study along with others done by: The Bell System, the Bureau of Business, Harvard Business School, Port Authority of New York, Sears Roebuck, and General Electric. In scope and detail, it is unmatched.

Meyer [48] details the design and validation of the General Electric in-basket. Although the test itself is not included, the article would be an excellent resource for the program designer.



Jaffee offers two books containing in-basket information [90], [89]. The latter is devoted exclusively to the in-basket. It is a workbook containing two complete in-basket exercises with all forms, instructions, etc. to enable administration to individuals. This is not to imply that it is intended to provide the program designer with an off-the-shelf instrument, for the point is made repeatedly that to be effective the in-basket must be tailored to a specific program. Rather, the book was intended as a training device for students.

#### f. Reliability

The summary of reliability studies done by Howard [34] negates the requirement for considering them individually. She writes:

In many assessment center exercises and in the final evaluations each participant is evaluated by more than one assessor. Accordingly, interrater reliability becomes a matter of some importance, in addition to the reliability of individual measures. A summary of reliability data is shown in Table 1.

It should be noted that the AT&T studies of the in-basket, projective tests and interviews probably had inflated reliability estimates, since the interrater reliability was determined for the written report of a procedure not the procedure itself. Two raters in high agreement on what a report says is a far less potent finding than two raters in high agreement on how a candidate performs in a situational exercise. The reliability coefficients do indicate, however, that the reports presented clear evaluations from which consistent ratings could be made.

In summary, based on the data available, interrater reliabilities for assessment evaluations and for several assessment components seem sufficiently high to support their further use. There appear to be no advantages of ratings vs. rankings or psychologists vs. managers in terms of reliability.



Figure 8.

## Summary of Interrater Reliability Studies of Assessment Procedures

Source	Company	Variables	Assessors	Interrater Reliability	
Thomson (N = 71)	SOHIO	13 dimensions	2 psychologists	Ratings, .73-.93, $\bar{r} =$ .85 <sup>a</sup>	
Thomson (N = 71)	SOHIO	13 dimensions	3 managers	Ratings, .78-.95, $\bar{r} =$ .89 <sup>a</sup>	
Thomson (N = 71)	SOHIO	Potential	2 psychologists	Ratings, .89 <sup>a</sup>	
Thomson (N = 71)	SOHIO	Potential	3 managers	Ratings, .93 <sup>a</sup>	
McConnell & Parker (N = 12)	AMA client	a) 12 categor. b) Potential	5 managers 5 managers	Ratings, .64-.90 <sup>a</sup> Ratings, .85 <sup>a</sup>	
McConnell & Parker (N = 12-48)	6 AMA clients	Overall mgt. ability	5 managers	Ratings, .85-.98 <sup>a</sup>	
Greenwood & McNamara (N = 228)	IBM	a) Task force game b) Leaderless group c) Mfg. problem	All pairs of 3 alternating observers	a) Ratings, .70 Rankings, .71 b) Ratings, .66 Rankings, .64 c) Ratings, .74 Rankings, .75	
Bray & Grant (N = 355)	AT&T	a) Leaderless b) Mfg. problem c) In-basket	2 psychologists 2 psychologists 2 psychologists	Ratings, .75 Rankings, .75 Ratings, .60 Rankings, .69 Ratings, .92	(cont.)





Figure 8. (cont.)

Source	Company	Variables	Assessors	Interrater Reliability
Grant, Katkovsky & Bray (N = 355)	AT&T	9 variables from projective tests	2 psychologists	Ratings, .85-.94 <sup>a</sup>
Grant & Bray (N = 355)	AT&T	18 variables from interview data	2 psychologists	Median = .82 college, .72 non-college

<sup>a</sup> Internal consistency estimates, correction for number of assessors.

Source: Howard [34]



g. Validity

Byham's article [11] provides a basic primer on validity in laymen's terms. At the other end of the spectrum, Taft [61] provides a wide-ranging, probing treatment of the subject. With respect to the criterion problem he writes:

All assessment programs involve studies of the link between two or more pieces of behavior, whether the primary purpose be selection, validation, research on tests, or personality research. Some of this behavior is known as assessment behavior and some as criterion behavior. These concepts are analagous to the independent and dependent variables in experimental psychology, and it is an arbitrary decision by the experimenter which one is designated which. Most of the reports of assessment have devoted some space to the criterion problem . . .

A special problem that arises in personality assessment is the frequent unreliability of the criterion which so often represent subjective judgments that vary from one criterion rater to another. This unreliability imposes a serious limitation on the potential validity of personality assessments, and it makes it difficult to evaluate some of the low validity coefficients reported . . .

The assessment strategy should be aimed at the criterion, once the latter has been established . . .

A complication that arises in criteria analysis, . . . is that an assessor can only predict to indices of the criteria, not to the actual criteria, themselves . . .

Sometimes the assessors may be able to convince those who control the criterion ratings that the indices which the latter are using are not consistent with their fundamental criterion, but eventually the assessors and the criterion raters must agree on some criterion index in accordance with the policy of the organization . . .

All other things being equal, the best assessors for predicting existing criteria are those who are partially contaminated with the same experience, standards, and outlook as the criterion raters and can thus rely on a global strategy to make their predictions.

Taft also addresses the fact that criteria are dynamic rather than static:



A further condition that is often ignored in assessment is that of effluxion of time; the predictions are usually made on the assumption that the status of the candidate on the relevant variables will remain constant over time . . .

In some complex situations, in which the criterion performance is highly dependent on the conditions, the inability of the assessors to predict the specific conditions that will operate for any particular candidate may render the assessments completely invalid.

This latter point is restated and amplified by Ghiselli and Haire [24] who write:

When we validate selection tests, we typically relate scores to some measure of job performance obtained during a brief initial period of employment. This initial period may be as short as the first two or three months of employment, and it seldom is as long as the first two or three years. Presumably the men are hired for a much longer period. The rationale of our validation procedures involves matching a predictor variable with a criterion. But, does the brief criterion itself predict the one we are interested in--performance over a relatively long period? To be sure, criterion scores for the initial period indicate the contribution workers have made during that time, but this is not exactly what we want to measure. At least implicitly, early criterion data are taken to stand for ultimate performance or total performance on the job. The period selected for a criterion is usually determined by practical considerations such as the availability of data. The question to which this paper addresses itself is: Do tests validated against such a brief initial criterion maintain their validity over a longer period of measured performance? There are indications that they do not . . . Worbois [72].

The practice of using performance data obtained during an initial period and letting it stand for ultimate or total performance completely ignores the dynamic character of the criterion and important changes that are taking place in the worker's performance. Over a considerable length of time on the job, there is not only a change in average performance, but also significant changes in the order of individuals in their performance. The change in average performance may be much more than we are used to thinking: we are used to laboratory tasks which can be mastered in an hour or so. On the job, performance may improve for many months or even years . . .

In one case, the authors have followed the progress of a group of investment salesmen for ten years. During this extended period there was 650 percent improvement in average productivity and still no evidence of leveling off.





Indeed a straight line would fit the whole data well. If there are significant changes in order within such a period of improvement, early validation will be seriously misleading. A good many studies have indicated such a change in order. Contiguous stages of learning typically correlate much higher than periods separated by some time . . . Factorial analyses of learning data clearly indicate a change in weighting of factors for different periods of the learning process . . . All of these things suggest that early criterion data do not measure all of the important variables in performance.

With the average performance and rank order of individuals both changing, one is tempted to turn to the rate of improvement as a criterion. If ultimate or total performance is our goal, rate may be a useful substitute. To wait for final performance is impractical; even maximal performance may be so far off that it delays the validation of new instruments impossibly. There is some evidence that final level is predicted by rate of improvement, so, even though it indicates little about an individual's level of performance during the initial period, it may be more indicative of final values than the early criterion itself. In view of the difficulties encountered with a partial criterion which does not predict the ultimate criterion, this study will examine, in a particular case, the validation of tests for the prediction of differential rates of improvement.

From their study of 56 taxicab drivers, Ghiselli and Haire arrived at the following conclusions:

1. It is suggested that the dynamic nature of the criterion of job performance presents real difficulties in using initial measures. If the desired criterion is ultimate or total performance, there is some question whether an initial criterion measure will itself be a good predictor. If not, validation against this early criterion is no validation at all.

2. Data are presented showing, in a particular case, job performance over a period of time. During this time significant changes occurred in the average performance, the variance, and the rank order of workers.

3. Validating a battery of tests against the criterion data obtained, it is possible to predict the first three weeks of performance, or the last three weeks, but it is not possible to predict both with the same battery. The tests show various patterns of validity: low validity in initial periods, rising later; high validity in initial periods, falling later; and cyclical variations in validity measured against successive stages in performance.





4. In these data, it is possible to predict rate of improvement with some success, but, over the brief period investigated, rate is not strikingly associated with total production.

Bray and Moses' [76] review of the literature produced these comments regarding the criterion problem:

Such heightened concerns about test validation led naturally to the "criterion problem," a recurring problem through the years because few researchers directly face up to this issue. A little progress was noted. For example, supervisory ratings, one of the most easily obtained criteria measures, again were convincingly discredited, which no doubt will discourage few from using them in the future. An implicit point also under fire was whether criteria used in various test validation studies were actually pertinent to the test validated.

Another important issue in the past three years is related to criteria for selection in a different way. This is the question of how long after selection a criterion measure should be taken. This concern, as well as a somewhat newer interest in developmental changes in employees has led to even more urgent pleas for longitudinal studies than was true previously . . .

One of the more impressive analyses was presented by Ronan and Prien . . . [123] . . . who appear to be moving us closer to a theory of criteria . . . Their review of the literature demonstrates that it is totally unrealistic to assume that job performance is unidimensional. A single criterion, even a composite one, is often very misleading. . . . many investigators have not been attentive to the multidimensional nature of job performance. Instead they have too often used existing, readily available organizational indices alleged to be indicative of performance rather than devising measures focused on appropriate behavior. . .

What we are saying is that some very serious questions must be raised about the efficacy of the continued and uncritical use of supervisory ratings as the criterion measure. Perhaps this is why we have a criterion "problem."

Meyer in his article: "The validity of the in-basket as a measure of managerial performance" provides a description of test design and validation. He also performed a cross validation in his study.



Guion and Gottier [29] provide a review of "Validity of personality measures in personnel selection" for the twelve year period 1952 - 1963. They present a tabular summary of 95 validation studies done on fifteen different personality and interest inventories. Similar summaries are included on projective measures, special inventories, and personal history data. Unfortunately, their conclusions are not very encouraging, as they note:

There is no . . . evidence in the survey that companies . . . have . . . recognized the need to validate the instruments chosen for their own specific situations . . .

Even without these flaws nearly every study may be criticized as following the traditional paradigm of testing for a relationship between the test and a criterion. Certainly more imaginative designs might well reflect the undoubtedly complex relationship between motivational variables, situational variables, ability variables, and behavior.

They also echo an often-mentioned bit of advice for the program designer:

Whatever the reason, the point still remains: a home-made personality or interest measure, carefully and completely developed for a specific situation, is a better bet for prediction than is a standard personality measure with a standard system of scoring.

This review of references concerned with validity is concluded by Howard [34]. She provides tabular summaries of several validity studies, as follows:

What must be regarded as "The Study" in assessment center validity is AT&T's Management Progress Study . . . which was predictive and "uncontaminated;" i.e., results were retained for research purposes only and not released to management to influence promotion decisions. The researchers administered the assessment procedure to 422 male employees of six Bell Telephone companies beginning in 1956, stored the results, and waited eight years before pursuing information on the assessee's progress in the company. While many may view eight years of waiting as an almost unbelievable display of forbearance, the authors



admit that by their own standards they were impatient-- they had intended to wait ten years. Comparisons made in 1965 of management level achieved by men assessed six to eight years previously are shown in (Figure 9). Validity for the assessment predictions was amply demonstrated.

Figure 9.

Relationship Between AT&T Assessment Staff Prediction  
and Management Level Achieved

Prediction if make middle management within 10 years	Status in July, 1965		
	% 1st level management	% 2nd level management	% middle management
Yes (N = 62)	2	College <sup>a</sup> 50	48
No or ? (N = 63)	11	78	11
Yes (N = 41)	7	Non-College <sup>a</sup> 61	32
No or ? (N = 103)	60	35	5

Note: Adapted from Bray and Grant [10]. Source: Howard [34]

<sup>a</sup> $\chi^2$  significant at  $p < .001$

Point biserial correlations were .44 for the college group and .71 for the non-college group. Of the total number of men who reached middle management, 78 percent were correctly identified by the assessment staff. In contrast, among those in both groups who had not progressed further than first level management, the assessors predicted that 95 percent would not reach middle management within ten years. Note that these predictions still had two years to run; later communications from the company indicate that even greater accuracy was achieved.

Correlations between assessment ratings of general effectiveness and salary increments were also given for four samples of individuals who had at least six years of tenure in management since being assessed; (a) Company A, 54 college men,  $r = .41$ ; (b) Company C, 27 college men,  $r = .51$ ; (c) Company B, 83 college men,  $r = .45$ ; (d) Company C, 39 non-college men,  $r = .52$ . All correlations were significant at  $p < .01$ . Combined with the data in Table 2, the usefulness of AT&T's overall assessment ratings for predicting management success seems well established.





Another AT&T study with newly hired candidates for sales positions also used an uncontaminated, predictive validity paradigm (5). The primary criterion of performance was a six-month field review by an experienced team from AT&T headquarters which regularly makes such inspections. Where the assessment judgment was "more than acceptable," 100 percent of the salesmen met the review standards. Comparable success figures for those judged "acceptable," "less than acceptable," and "unacceptable" were 60 percent, 44 percent, and 10 percent, respectively, producing a chi-square value of 24.19 ( $p < .001$ ). Again the predictive validity of AT&T's overall assessment was evident, this time for the job of salesman and over a short time interval.

Problems of criterion contamination have confounded predictive validity studies other than those described above, since assessment ratings were used in promotional decisions. Where assessment ratings were used primarily to make the first promotion, the effect on later promotions was not felt to be large, however. A summary of these contaminated criterion studies is shown in Figure 10.

From the studies done to date, overall ratings of potential or performance from assessment center procedures generally have shown impressive predictive validity, especially for managerial jobs. Unfortunately, use of the ratings for decision making about assessees' careers somewhat restrains an overwhelming acceptance of the findings. Nevertheless, "clean" predictive validity has been demonstrated, but only in two studies with both at the same company.

#### h. Peer Ratings

Kraut [39] reports an IBM study on peer ratings conducted on samples of managers and executives. In summary he writes:

In the business world, as elsewhere, people regularly form impressions of their associates. The use of peer ratings among managers may merely formalize a process in which managers already engage informally. This study indicates that the use of managers' peer ratings is likely to raise the caliber of men who move into the executive ranks.

A source which deals with a more relevant application is that by Hollander [33]. His paper reports a study conducted on U. S. Naval Officer Candidates circa 1955. He reports:



Figure 10.

Summary of Validity Studies of Overall Assessment Rating  
Where Ratings Were Used for Promotions

Source	Company	Criteria	Time	Validity
Wollowick & McNamara (N = 94 men, lower & middle management)	IBM	Position code	3 years	$r = .37^{***}$
Dodd (11 groups, various jobs, N = 11-72)	IBM	Position level & salary	1-4 years	Significant for *8 of 11 groups, $r = .29$ to .63
Kraut & Scott (N = a) 67 Sales, b) 141 Service, c) Admin., 1st line mgt.)	IBM Office Products Division	% promoted to 3 higher levels of management	up to 5 yrs	a) $x^2 = 16.18^{**}$ b) $x^2 = 10.60^*$ c) $x^2 = 6.66$ ns
Thomson (N = 71)	SOHIO	Ratings from super- visors' interviews	6-27 mos.	$r = .64^{***}$
Finley (N = a) 109, b) 119)	SOHIO	Supervisors' ratings, potential	30-62 mos. 9-29 mos.	a) $r = .65^{***}$ b) $r = .63^{***}$
Carleton (N = 122)	SOHIO	Supervisors' ratings, potential	2-1/2-5 yrs.	$r = .65^{***}$
Moses (N = 5,943)	AT&T	a) 2 or more promotions b) Management level	7 yrs.	a) $x^2 = 12.39^{***}$ b) $r = .44^{***}$

(cont.)



Figure 10. (cont.)

Source	Company	Criteria	Time	Validity
Campbell & Bray (N = 471 1st-level supervisors, assessed vs. nonassessed)	AT&T	Last appraisal + ratings & rankings from interview (performance)	Several yrs	55% of those pro- moted before center installed rated "above average per- formers" vs. 68% of those assessed "acceptable."*
Campbell & Bray (N = 471 1st level supervisors, assessed vs. nonassessed)	AT&T	Last appraisal + ratings & rankings from intial (potential)	Several yrs	28% of those pro- moted before center installed rated "high potential" vs. 50% of those assessed "acceptable."*
Byham & Thornton (N = 37 supervisors processed by assess- ment vs. 27 super- visors placed traditionally)	Caterpillar Tractor Co.	Job performance	---	ns (small N + restric- tion of range of criterion).

\*p < .05  
\*\*p < .01  
\*\*\*p < .001

Source: Howard [34]



The evidence presented uniformly supports the conclusion that peer nominations used early in training can make a distinctive contribution to the prediction of a long-range criterion of performance after training. A direct implication of this is to encourage the judicious use of such early evaluations as a supplement to other predictive measures.

Another military application of the use of peer nominations (PNs) is reported by Amir, et. al. [2]. Their study was done with soldiers of the Israel Defense Forces in 1964 - 1965. A total of 3897 subjects were involved. Their analysis of the results were summarized in the following paragraphs:

What explanation can be found for the high PN validity coefficients reported here in contrast to those reported in earlier studies? Moreover, what explains the higher coefficients reported for promotion to officer rank from NCO courses than those predicting promotion to NCO courses from basic training? . . . In respect to the former question, the following reasons appear relevant: The present investigators observed a high level of task orientation displayed by the soldiers who responded to the PN questions. Their attitude may be a function of the knowledge shared by most, if not by all, of the troops that their present or future commanders may be called upon at any moment to demonstrate their leadership abilities in actual combat. Therefore, the men tend to choose those of their companions who really impress them as possessing these qualities. Incidentally, this high level of task orientation may be inferred indirectly from the lack of contamination of the PN scores with friendship choices. The validity coefficient of PN scores after friendship scores are partialled out was .55 as compared to .58 for basic training prior to the partial out of the friendship score and .78 as compared to .79 for NCO courses.

A second possible explanation for the relatively high PN coefficients reported here lies in the fact that soldiers are well acquainted with the army's criteria for promotion to higher rank. This information appears to be widely disseminated among the troops as a result of the close and informal contact maintained between soldiers of all ranks. Such informal relationships facilitate communication between ranks. However, these reasons appear to be more potent for troops in NCO courses than for those in basic training, which is perhaps why predictions regarding promotion from NCO to officer rank are of greater validity than those from





basic training to NCO rank. Troops in training for NCO rank appear to identify more closely with the values and requirements of the army than do the recruits, and are already an integral part of the military leadership. Consequently, they have more understanding of the qualities and demands of leadership than do newly enlisted troops, so that the PN choices of the NCO trainees are likely to have greater predictive power than those of troops in basic training.

The final selection chosen relates directly to the assessment center use of peer ratings. Finkle and Jones [85] provide a discussion on the use of such ratings from a design standpoint and cover some of the advantages and disadvantages of including peer ratings in an assessment program:

As in situational exercises, we expect that peer ratings, if they are to be used, have to be constructed for any assessment program in accordance with the format and objectives of the program. The peer, or sociometric, ratings can provide the assessment committee with information as to how the assessees themselves judged or viewed one another. Such information can be solicited at the end of the program, at times during the program, or both. Questionnaires can be designed to cover opinions about particular parts of the program, such as a group exercise just completed, or about overall skills or characteristics witnessed throughout the program. The manner of questioning can be as varied as any form of rating including asking assessees to rank one another (including or not including oneself) on overall contribution to an exercise or on specific characteristics asking them to write out opinions or explanations about their own performance or that of others, asking them to rate all other assessees on scales similar (or not) in content to the variables the assessment committee will later employ, or asking them to nominate one or more persons from the total assessment group as being the best in certain areas.

Obviously, the perspective of the assessees will not be like that of manager observers in several respects. Most importantly, they will simply not have been paying as much attention to one another as to themselves. This means they really have a limited basis for rating one another. Then, too, their judgment as to the significance of certain actions and abilities may be less realistic than that of experienced managers. Finally, peer ratings are always somewhat suspect to popularity contests (despite some clear research evidence to the contrary)--though absence of exposure to one another prior to the assessment program should forestall this possibility considerably.



## i. Assessors

A thorough discussion of the selection and training of assessors is provided by Byham [11] who writes:

### Choosing the assessors

Typically, assessors are line managers working two or three levels above the man being assessed. . . . These are the individuals who are responsible for promotion and who know most thoroughly the job requirements of the positions one level above the candidate's.

The job background of the assessor, of course, depends on the purpose of the specific assessment center. Where broader management aptitudes are being assessed, it is common for the assessors to be drawn from a number of areas in a company. This not only brings in a number of viewpoints, but exposes the candidate to representatives of a number of areas where he may find promotional opportunity. Having representatives of different areas also increases the acceptance of the findings throughout the company.

Assessors from management, like the candidates themselves, are usually nominated by their superiors (although in a few companies the center administrator makes an effort to recruit them). Naturally, the practice has its dangers. After a center has passed from the experimental to the operational phase, "purity" controls may be relaxed somewhat, and senior management may be tempted to send "cooperative" managers to centers to act as assessors. This temptation is particularly strong where the assessors serve for extended terms.

Center administrators have chosen to react to this problem in various ways. Some companies rely on their assessor training programs to screen out assessors who are unacceptable in the role, for one reason or another. The rationale here is that it is easy to spot an unqualified assessor during training and ease him out without bloodshed. As a fine point of strategy, for example, many center administrators suggest that it is wise to establish a pool of assessors, rather than train assessors for specific assignments. With the pooling arrangement, it is easy for the administrator to bypass unqualified assessors.

A major point of controversy among operators of assessment centers is the desirability of using professional psychologists rather than specially trained managers as assessors. Most arguments for using psychologists are based on their skills in observation; they are trained to recognize behavior not obvious to the untrained eye.



While this argument is plausible, it has yet to be demonstrated in an operational center. Three studies have found no differences.

However, the superiority of psychologists over completely untrained managers is well established. Because of this superiority, companies often use psychologists as assessors in experimental or pilot programs, where training management assessors would be difficult. Psychologists are also used extensively for assessing higher levels of company management; at high levels, it is difficult to get and train managers who do not know the candidates personally, and the objective, independent psychologist is seen as the fairest evaluator.

By and large, companies now prefer to establish a pool of trained manager-assessors, each of whom serves more than once. Individual assessors are usually drawn from the pool to serve once or twice a year--a few companies ask assessors to serve only once. AT&T's practice is exceptional--it assigns assessors for six-month terms and center administrators for one year.

There are advantages and disadvantages to brief assignments. On the one hand, brief assignments usually mean that better men can be recruited, their enthusiasm and effort will be greater, more managers will benefit from the training involved in becoming an assessor, and more managers will be well prepared, after their tour of duty is over, to make judicious use of assessment reports. On the other hand, more managers must be trained and kept off their jobs, and those who serve briefly will not have as comprehensive an experience as assessors as they would if they had served a longer period.

Where the appointment is for an extended period of six months or so, of course, more rigorous and lengthy assessor training is feasible--AT&T trains managers for a month--and longer experience in the role is very valuable to an assessor. One substantial disadvantage of the long assignment is that assessment becomes a routine matter, which it never should. Reports from fatigued assessors read like computer output, and it is hard to think of them as anything more. Currently, only AT&T appoints assessors for prolonged periods.

### Training the assessors

In the companies now operating assessment centers, there is a notable difference in the emphasis placed on training assessors. Some companies give new assessors as little as one hour of training, which really amounts to just an orientation to the whole procedure, while most others spend three or four days.





One can argue that the task of an assessor is similar to the requirements of most managers' jobs--a manager must interview individuals, observe groups, and evaluate presentations. Assessing requires skill in these same areas, and hence many feel that there is little justification for further training.

The principal rebuttal to these arguments is this: because a man has been doing something, he has not necessarily been doing it well. Companies reported marked improvements in the reliability of supervisory ratings after the supervisors have been trained to work as assessors. Nonprofessionals need to be shown what to look for in observing group discussions and individual presentations, or they may focus on purely surface characteristics. While rigid scientific studies are lacking, it is obvious from comparing the reports presented by experienced and inexperienced assessors that training makes a very big difference in the quality of performance.

The most common method of training is by understudy. In the usual situation, an assessor-in-training sits through an entire assessment cycle as a nonvoting member. Another method of assessor training, particularly when assessment centers are being introduced, is to have the assessors go through the assessment experience first as candidates. Everything is the same except that there are no assessors present. In a typical training situation, the assessors go through an activity such as group discussion and then critique the discussion and identify possible areas of observation afforded by the situation. Several companies videotape activities to give assessors practice in making observations.

Byham and Pentecost [12] repeat much of the foregoing information, and add the following points:

Some companies believe that this experience is so beneficial that they have gone to a one-to-one assessor-candidate ratio in order to expose more people to it.

Almost all of an assessor's training and experience can be applied to his job and should improve his ability to interview and appraise his subordinates.

Greenwood, et. al. [28] make the following comments concerning assessor selection and training:

. . . the instructions to the evaluators, whether professional or nonprofessional, should be explicit as to the specific type of behavior to be evaluated, examples provided as to kinds of behavior that may be expected to be elicited



by the specific situational exercises, and standardized rating forms provided for their use. However, the results tend to indicate that the selection of evaluators for this type of assessment need not be based on whether they have completed an extensive training program or have professional experience in personnel assessment.

Taft [61] makes a strong point in support of line managers as assessors:

All other things being equal, the best assessors for predicting existing criteria are those who are partially contaminated with the same experience, standards, and outlook as the criterion raters and can thus rely on a global strategy to make their predictions.

He makes two more pertinent observations in his summary, e.g.:

The assessors should be selected for proven ability to make accurate judgments in the assessment situation, i.e., they should be validated.

The assessors should be familiar with the criterion situation, and should take this situation into account when they make the predictions.

Concerning the alleged "side benefits" claimed for assessor experience, Howard [34] makes the following critical observation:

Training Assessors--Benefits of assessor training have been claimed not only in the form of a partial solution of the criterion problem but through (a) improvements in interviewing skills (b) broadening of observation skills (c) increased appreciation of group dynamics and leadership styles (d) new insights into behavior (e) strengthening of management skills through working with simulations, and (f) broadening one's repertoire of responses to problems. No well-designed training studies have validated these promises, however; as has been pointed out previously, firms do considerably more management research on selection than on training and development . . .

In summary, Bender [3] compiled the following information from his survey of assessment centers:



Figure 11.

Selection and Training of Assessors

Number of organizational levels of assessors above assessee:\*\*

Response frequency  $\frac{1}{0}$   $\frac{2}{18}$   $\frac{3}{7}$   $\frac{4}{4}$

Number of assessors used when your assessment center operates:

Response frequency  $\frac{3}{3}$   $\frac{4}{9}$   $\frac{5}{3}$   $\frac{6}{12}$   $\frac{7}{1}$   $\frac{8}{1}$   $\frac{9}{1}$   $\frac{11}{1}$   $\frac{12}{1}$   $\frac{24}{1}$

Number of days you devote to training one assessor:

Response frequency  $\frac{5 \text{ hours}}{3}$   $\frac{1}{4}$   $\frac{2}{3}$   $\frac{2.5}{1}$   $\frac{3}{5}$   $\frac{3.5}{1}$   $\frac{4}{2}$   $\frac{5}{6}$   $\frac{6}{1}$   $\frac{9}{1}$   $\frac{10}{3}$   $\frac{15}{2}$

\*\*One organization indicated that only psychologists and staff personnel were used as assessors.

Source: Bender [3].

j. Evaluation of Candidates

Byham and Pentecost [12] introduce the topic with a brief overview of the evaluation process:

The professionalism of an assessment center is probably best measured by forms provided to assessors to record and report their observations. These can range from a detailed description of all pertinent behavior to a series of 1-to-5 ratings on key variables. Well-developed forms can guide the assessors in making observations and can aid them in structuring reports.

There are several ways of reaching assessors' consensus on the candidates, among them a method based on predetermined factors. Discussion centers on one candidate at a time. The assessor reports to the group on the exercise he has observed; all assessors then rate the candidate 1 to 5 on the list of factors. This procedure is repeated for each exercise reported and the assessors then rate the candidate's overall performance on each factor. Next, each assessor announces his rating on each factor and differences are discussed until consensus is reached.





The advantage of the factor-rating approach is that it forces the assessors to consider as important the whole range of behavior identified. Otherwise the assessment decision might fail to consider important areas because of overriding positive or negative performance in others. Also, the assessment decisions tend to be more organized.

Another approach is for assessors to give reports on a candidate, one after another while all assessors take notes. A general discussion follows. This procedure facilitates the integration and interrelation of observations, but may result in so much data that it is difficult for the assessors to consider all of it at one time.

Still another variation is to have one assessor write a composite report on a candidate from individual written reports prepared by assessors after each exercise. The composite reports are then discussed by the entire group of assessors until consensus is reached.

A more thorough treatment is provided by Finkle and Jones [85] as they describe the procedure used in the Sohio program:

Accepting the philosophy that we learn best by doing, we begin the evaluation of our first assessee after having spent approximately an hour and a half on orientation. With the possible exception of the first case, the assessees are considered in alphabetical order. An attempt is made by the staff to select as the first case one that will probably prove to be rather straightforward and consistent. We do not feel this presort is critical and a quick scan may not, obviously, accomplish the objective. However, the management representatives gain further insight into the variables by actually putting them into practice, and we feel that it is desirable to avoid the confusion that may arise when discussing an unusually controversial individual. Of course learning can and does occur when there is a good deal of difference of opinion which arises because of the complexity of the assessee's personality. However, understanding how to use the variables is difficult enough in the first case without adding further complications if they can be successfully avoided.

The same procedural format is used for all evaluations.

1. Pictures of the assessee are circulated among the staff members to refresh memories and to be sure that those who have seen the assessee in operation associate the name and face correctly. A rating booklet and a completed assessment summary sheet containing the relevant test results is given to each staff member together with a copy of the biographical questionnaire the assessee filled in prior to





the program and a set of note paper for making notes on reports presented by other members of the assessment committee.

2. The manager who conducted the personal interview of the assessee being reviewed presents his report of information which complements the biographical questionnaire. He also relates the general manner in which the assessee handled himself during the interview.

3. The psychologist who interpreted the projective test materials reads his report. This report focuses upon the way the assessee structures and organizes his work, his attitudes toward people, his apparent motivation, and his emotional stability.

(Note: Programs employing projective tests are in the minority.)

4. Then the report of the assessee's performance in each of the situational exercises is presented. Each assessee has been observed by a different management representative at each exercise, so that a report on him is made by each of the management staff. Responses of the assessee to a questionnaire completed after each exercise are read to the committee by the program administrator. The tables summarizing the peer rankings of effectiveness which are completed following each of the exercises are handed out with a reminder to keep them through the review of all assessees as well as the first.

5. A discussion is held of the appraisal by all committee members of five-minute talks that were given by each assessee.

6. The report forms showing the results of a final peer questionnaire completed by the assessees as their last task during the three-day assessment period are distributed--again with a reminder to keep them through all assessee evaluations.

During the presentation of information, the committee members are encouraged to ask questions as each report is presented, not only to clarify the specific information being presented but also to add further knowledge about the procedure and the nature of its contribution to the program. This need for a full understanding of the procedures is particularly true of the projective test report. Most likely, this is the management representatives' first contact with the concept of projective testing. It is important that they know something of the theory underlying the use and the limitations of this type of testing. As the various reports are fully discussed and the presenters questioned, the focus of this discussion should be



clarification rather than evaluation as such. Either the assessee or the particular procedure in use should be better known as a result of the questioning. The professional staff has the responsibility to see that the committee avoids premature efforts to "type" or draw inferences rather than give or digest a descriptive report of findings.

Once the personal history has been reviewed, the interview, projectives, situational exercises, and questionnaire information presented, and the five-minute talk discussed, the assessment committee has available to it the evidence upon which it will base its recommendations. The task now is to draw upon this information to judge the personal characteristics in the rating booklet.

The objective is to build a consensus of opinion concerning how the assessee behaves as a person as a starting point for the committee and other users of the information to consider the implications his talents and style have for his future contribution to the company. The committee members are instructed to rate the scales on the basis of their judgment after considering all the information. They proceed one scale at a time. The individual members make their ratings independently and announce them upon request of the committee chairman after all have had full opportunity to arrive at their scores. Each committee member simply calls out, upon request, the scale point (for example, 2, 2-1/2, 3) which he checked in his own rating booklet. The chairman tallies the ratings and calls for a discussion of any discrepancies greater than one point in order to assure that all committee members are weighing all relevant information, excluding irrelevant information, and attaching the intended meaning to the variable being rated and the bench-marks (scale descriptions) on the scale. If the review of sources and scale meaning persuades one or more of the committee to change his mark, the corrected mark is made in red and the committee chairman is informed. If no one wishes to change his mark, the discussion is closed and the next variable is considered. This variance in committee opinion is then reflected in the narrative report.

Because the first case is a learning exercise as well as a practical handling of results, it is well to avoid the temptation to rush. Time is taken to call attention to the various sources of information throughout the protocol that support the ratings the assessment committee has arrived at. Much of the discussion is focused on the scale definitions so that the concepts will become better crystallized for the management representatives. For, as understanding increases, the frequency of differences in ratings which occur primarily because of differing interpretations of the scales' meanings or the behavior indicated by the scale points is reduced.



We have found that 1-1/2 to 2 hours can be profitably spent on the initial case. The time required for subsequent cases falls within the range of 1 to 1-1/2 hours. We see no evidence that a reduced amount of time spent on a particular assessee has reduced the quality of assessment. Our observations, admittedly subjective, lead us to believe that the feeling of responsibility of the assessment committee members causes them to adjust their pace appropriately to the complexity and needs of the case they are reviewing and in accordance with the confidence they have in their personal understanding and mastery of the system.

One of the procedural problems we have been alert to has been the possibility that the interpretation and integration of the cases may vary as a function of the sequence in which they are introduced in the integration session. Yet we see no evidence that having an assessee discussed early or late in the session has a significant bearing on the quality or utility of the ratings or recommendations. Repetition of the first case as a thirteenth case has indicated that being first did not affect the outcome. Admittedly, there have been times when one or more members of the professional staff has had reservations about the quality of the committee's judgments or recommendations with regard to a particular assessee. However, we do not see such instances as related to sequence of consideration, to length of time devoted to the case, or to any other procedural factor that might be readily adjusted, improved, or controlled.

Following the completion of ratings on the various scales, a Viewgraph transparency is used to project on a screen a summary of the tallies made by the program administrator of the committee judgments on each scale. Also on this slide is shown--for the first time--the "pipe organ" diagrams showing the results for that assessee on the mental ability tests. When these scores are noted, either one member of the professional staff or the program administrator reviews for the committee the ratings given on each of the scales. Reviewing the rating scales, of course, serves to consolidate the group's thinking about the assessee so that all members view him in a reasonably comparable way before considering the questions of placement, development, and potential. We have adopted the practice of withholding information about the assessee's overall mental ability as determined directly from tests until this time to avoid the possible biasing effect of this information on the judgments of other characteristics and skills. This factor is then introduced at the time the judgments are reviewed and is considered in the general comments, the placement, supervisory, development and potential recommendations.





## Resolving Differences

The task of working toward a resolution of those differences of opinion that inevitably arise in the rating of the behavioral variables warrants discussion before we turn to the process for developing the final recommendations concerning utilization and development. In actual practice, it is the committee chairman who exercises the key role in determining whether an attempt will be made to resolve differences successfully, at least to the satisfaction of the disagreeing committee members, or whether issues will be merely politely debated. However, if the debate or discussion moves into a somewhat complex consideration of personality theory, human behavior, or social interaction, the psychologists present will naturally be looked to as the experts who should resolve the matter.

We mentioned earlier the pressure upon the professional staff members to speak competently as experts at times and to exercise judiciously their responsibilities to aid the management representatives in the interpretation of apparently contradictory test findings. If the professionals are not careful, however, they can misperceive their appropriately felt pressure to perform in a professionally sound manner as a mandate to operate infallibly. Yet we have discovered that a professional staff person can be quite incorrect in his reasoning and unduly selective in his handling of the information available about the assessee. It is of course expected that this will not occur in every case. The greatest danger, however, is not whether the psychologist will be wrong in some instances--he will be--but whether he is willing to admit his error. If he cannot, then the session will turn into little more than a lecture for the professional staff with the management representatives and other committee members serving as a reluctant audience. Essentially, then, we are suggesting that each psychologist must be willing to assume an attitude of inquiry and participate in the search for the best possible assessment answers rather than attempting to promote his own viewpoints as being professionally correct.

The professional staff sets the tone in this regard. Consequently, if the professionals operate more as searchers than advocates, it is easier for the management representatives to also assume this approach. Actually, they are inclined to do so anyway and need only the support and encouragement that the psychologists' approach can provide.

Though we have indicated that the management representatives look to the professional staff for leadership, this is not to suggest that they are or ought to be passive followers. Indeed, our experience has been that the management representatives have been quite ready to



contribute their own ideas and have been quite perceptive concerning human behavior. In short, they have shown little tendency to be easily cowed or accepting of prima donnaish actions on the part of the permanent staff. Any efforts toward resolution of differences have clearly been joint efforts. Happily, the focus has not been on "who is right" but rather on "what is right."

Thus a difference in rating or recommendation should be approached from the viewpoint that an agreement or consensus may be desirable, but not necessary or perhaps in some instances not possible. Clearly, no one should change his opinions unless the available evidence leads him to a different interpretation. Most frequently, any disagreement in ratings occurs as a result of attending to different portions of the information, and the difference is usually resolved by one or perhaps both of the disagreeing members acknowledging that he has not given the weight to a specific piece of information that the variable under consideration warrants.

When a difference does become apparent as the committee members announce their ratings, each of the differing views is given a hearing. The committee member who has deviated furthest from the others is called on first by the committee chairman. The committee members are instructed to view this opportunity to explain their ratings as neither a sales presentation nor a defense attorney's plea. Rather, each should present the evidence for his rating and the reasoning he used in interpreting the evidence. He may question the other committee members regarding whether they had considered the same evidence or if they can point up fallacies in his logic. Others may request him to further amplify his evidence or reasoning, or if it seems appropriate, may assist him to better understand the meaning of the variable in question or the interpretation of the various procedures. As indicated earlier, any further discussion that moves in the direction of persuasion or disparagement is discouraged.

The chairman should also keep conversation relevant by sensing when a discussion has reached a point of diminishing returns or has begun to stray too far afield in defense or rebuttal of a point of view. In this context it is important that the professional resist the temptation to lecture to the group. We have already mentioned this in pointing out the danger of operating as though the task were to present his infallible judgments. Even though the professional staff member assumes the spirit of inquiry we have described, he is in some danger of operating too fully in an instructor role, for frequently he sees an opportunity to enlighten the group concerning what he feels is an especially valuable psychological insight.



We do not suggest that he always refrain from following up such an inclination, but we do recommend that he do so with exceeding caution lest he sabotage his own efforts by becoming irrelevant or technically overbearing.

Before turning to a consideration of the development of recommendations, we should mention that most of the disagreement in any integration session occurs during the rating of the variables rather than in the making of recommendations or the evaluation of potential. We feel that this is as it should be. The scales have demanded, in effect, that the committee recognize different perceptions, discuss these differences openly, and clarify their thinking. By the time the developmental, placement, and other recommendations are solicited a clear and more uniform view of the assessee generally prevails among the committee members.

### Placement Considerations

In considering the various placements that might be appropriate for the assessee, the primary criterion is that the placement be one that provides opportunity for him to rely heavily upon his areas of strength. It is our philosophical conviction that both the individual and the corporation are best served by placing him in areas in which he is most likely to experience success. Common sense, our own experience with the program, and anecdotal evidence supplied by successful business leaders suggest that the probability of success is greatest when the individual is employing strengths rather than trying to respond to the "challenge" of positions requiring him to surmount personal liabilities. Consequently, any other considerations become relevant only if this primary criterion is met.

However, the committee can only provide suggestions since a number of factors other than the individual's strengths are also considered in placement planning. Among these are present corporate needs, the pattern of future corporate growth, availability of appropriate supervisory climate, and the broadening exposure provided by the assignment.

Although the review of the scale ratings has pointed up the committee's consensual perception of the assessee, it is basic that the first step in the consideration of placement opportunities be to gain agreement concerning which of the personal qualities should be capitalized upon. Essentially, this entails only a restatement of the assessee's positive qualities in job-related terms. For example, assume the individual is organized in his work approach, has analytical skill and extensive financial training, but has limited forcefulness in interpersonal





dealings which results in little impact on others. A position requiring integration of complex financial data but with little or no responsibility for supervision or "selling" of reports would most likely provide best utilization and maximum satisfaction for this individual. Of course, if a position could be found that also provides an opportunity to gain greater confidence in interpersonal areas through being permitted to make well-prepared reports to a group which would respect the assessee's "expertise" and bear with him in his fumbling but courageous speaking efforts, so much the better. However, this would be a secondary placement target.

Once the personal strengths to be utilized have been clearly spelled out, the committee turns to the task of naming several positions in the company that meet these requirements. These positions are listed not as recommended placements per se, but rather as illustrative of the type of opportunity that should be sought for the assessee. Such examples help clarify for later users of the information the committee's practical interpretation of all of the rated qualities. It is desirable to identify positions in several different divisions if at all possible. Usually, however, the three management representatives on the committee at a particular time are not very familiar with all segments of the company. This further supports the concept of considering the committee's placement suggestions as illustrative only rather than as comprehensive.

This is a part of the assessment process in which the background of the management representatives is especially valuable. They are asked to draw upon their knowledge of the different phases of the business to identify positions that they feel make the type of demands the assessee's native ability, skills, style, and experience have prepared him to meet effectively. These positions are carefully considered by the committee with the professional staff representatives usually taking the role of the devil's advocate. It is at this point that disagreement is most apt to occur during the recommendation preparation phase. It is not unusual for the management representatives to mean slightly different responsibilities by use of the same term. Areas of disagreement are resolved, or attempts are made to resolve them, in much the same manner followed during the scale evaluation. If the ambiguities of a particular position terminology cannot be clarified, however, such a position should not contribute to the subsequent confusion of others by being used as an example.

Occasionally it is felt by an assessment committee that no current corporate positions actually are illustrative of how best to employ the skills of a particularly





unique assessec. In these instances it might be helpful to suggest the design of a new position and the way in which it would function.

Also, it may prove constructive in some cases to provide examples of positions that definitely should be avoided because the likelihood of failure would be quite great. In fact, in a few instances, we have evaluated individuals for whom it seemed less important that specific strengths be utilized than that some very pronounced weaknesses not be employed. Especially for these assessees, it is quite worthwhile to take time to delineate the types of positions to be avoided . . .

### Developmental Needs

When introducing the area of development, a good groundwork is laid by subscribing to the "self-development" theory that no one develops a person but the person himself. Corporate management is responsible, however, for providing the climate and opportunities that will enable the individual, if he so chooses, to continue his development in the areas into which his experience and initiative have already led him. In considering what types of opportunities the corporation should provide, it is well to further point out that those qualities that are already strengths should be further refined if possible. Weaknesses should be considered only to the extent that they are significant impediments to his performance. Excessive attention devoted to those liabilities that do not seriously limit the use of his strengths, but rather detract in a more-or-less academic way from his being a total person, may not be either a constructive or legitimate focus of the corporation. Therefore, in evaluating the desirability of public speaking training, for example, to the extent that such exposure would increase an already moderate-to-high level of competence or is a necessary skill to function effectively in positions realistically seen as options for the assessee, it should be encouraged. However, it is highly questionable that public speaking training should be recommended and supported by the corporation if it might not prove effective or simply because it might assist the individual in gaining an additional skill when in reality it would be unlikely that this additional competence would materially improve his likely contribution to the company.

We believe that the best development the corporation can provide comes from job placement that gives opportunity to apply strengths. Employing strengths increases the likelihood of successful accomplishments which in turn improves confidence and often provides greater insights into needs for broadening and development. It is upon this base that other developmental efforts can build and



prove effective. Consequently, some of the most important developmental recommendations are contained within the section on placement considerations.

In evaluating further developmental needs beyond those satisfied by proper job placement, the committee can be given a listing of available formal and informal learning opportunities. These might include all of the current training programs conducted within the company and also examples of external sources and activities which may be appropriate. It is not unusual for the committee to decide that special developmental opportunities beyond those contained within the recommendations on placement and supervisory climate are either not required or perhaps not warranted in relationship to probable return on the dollars invested in providing the individual with a particular opportunity. Return on investment is not an easy concept to measure when operating in the often intangible area of personal development. Nevertheless, it is not without merit as a guiding principle.

A wide variety of specific recommendations may be offered. The diversity may run from recommendations of a leave of absence with pay to permit completion of a doctoral program for a talented researcher to a bibliography of suggested readings in management practices for a young supervisor. The overriding concern is that the recommendation will enable the individual to be more productive for the company if he chooses to take advantage of the suggested opportunity. Here again, however, the recommendation of the committee should be seen as suggestive since many factors and conditions beyond their knowledge and control bear on the advisability and timing of specific developmental actions by or on behalf of the assessee.

### Potential

The final judgment made by the assessment committee of any assessee is an evaluation of his potential for contributing to the company. Again, for this rating a 5-point scale with half-step intervals is employed. Opportunities (numbers of jobs) at higher levels of management diminish quite markedly as one moves upward. Relatively few individuals ever move into serious contention for officer level positions. And yet nearly all higher level positions are filled by individuals who move from the levels of those now being assessed. The committee, therefore, should try to estimate the maximum level of contribution as a general guide to the company as to its resource potential for filling the top levels of responsibility. In actual practice, assessment committee judgments of potential are distributed on a normal curve basis.



In making the rating on potential, the objective is to estimate how far in the organization the assessee should advance and still make a constructive contribution before the normal retirement age. This may be different from the level to which he will actually advance. The rating on potential may be higher or lower than the level he will in reality attain. Undoubtedly, some men will be advanced in the organization beyond the point at which their abilities enable them to be effective. Others, through circumstances not completely within their control, will not advance to responsibility levels they could competently handle. It is a major objective of the assessment program to provide evidence and judgments that will improve the likelihood of each individual's being given the opportunity to reach his maximum level of contribution.

The assessment program will not be without error, however. There is surprisingly little disagreement at this point in the evaluation, but consensus is not necessarily equated with accuracy. We simply trust that the careful deliberations of a sincere committee will provide general guidance that can be constructively used in subsequent manpower deliberations.

After covering current operational methods of evaluation, it is considered prudent to review some theory on how the process might be improved. Taft [61] provides this function, writing as follows:

Let us conclude this section on the safety in numbers assumption with a proposal to combine the advantages of both multiple techniques and multiple assessors. The suggestion is that each assessor be given a limited amount of information on which to base his assessment judgments about the candidates, each assessor to receive different information. The assessments will then be pooled arithmetically. The information supplied may be objective or subjective, atomistic or molar, and may range from one item to life-history, or a test result, to a projective test protocol, an interview or the observation of behavior in a miniature situation. This procedure would enable a vast amount of data to be integrated without problems of weighting since unit weights for each assessor's contribution would be adequate--this would be analogous to an inventory that gives unit weight to each item. With adequate organization of the assessment program, this would permit several assessors to contribute to the final assessment so that different viewpoints and personality theories can be represented. This approach seems to be at least worth experimenting with.





Even if it is found that increased numbers of assessors increases (perceptibly) the accuracy of the assessments, there is still a fine calculus of cost in human time and effort to be computed. The decision to augment the panel with additional assessors is a function, among other things, of the gradient of diminishing returns, the ability of available extra assessors, the cost of using them, the effects on the candidates, and the desire to allow executives in the institution to participate in the assessment. The proposal made above of having many assessors, who contribute small pieces of information, may make it possible to conduct multiple assessments comparatively cheaply.

In summary, Taft makes the following recommendations:

Each assessor should be given no more than two or three units of information; there should be a large number of assessors whose predictions are pooled arithmetically, and without discussion.

In selection assessments, if committee decisions are desired, the assessors who are particularly well-experienced in the criterion situation should be given special influence in forming the final decisions, provided they have been shown to possess good ability to judge persons.

#### k. Feedback of Results to Candidates

Once again, Byham's [11] treatment provides a brief overview of the topic. He writes:

One of the most important, yet most hazardous, aspects of assessment center operation is feeding the reports back to the candidates. Companies handle this in widely different ways, depending on the purpose of their centers. Three companies offer candidates the option of receiving or not receiving feedback. Between 60% and 90% ask for it. These companies find that candidates who do very well and those who do very poorly usually know where they stand and do not request feedback, whereas those in the middle want to find out how they did and get hints for self-improvement. Some companies give feedback to all candidates automatically.

In almost all cases, and certainly in companies that are strongly concerned about management development, results are carefully couched in terms of the directions that a candidate's personal development should take in the future. The candidate's impact on his fellow candidates may be communicated to him to make him more objective about himself. His performance on individual tasks may be discussed with an eye to establishing a plan to overcome noted deficiencies.



When assessment and training are combined, it is possible to provide some feedback to candidates prior to their leaving the center. In some companies, a candidate must wait weeks for a feedback interview. Obviously, the sooner the feedback interview takes place, the more impact the training and development recommendations will have.

If a psychologist is available, he usually has the responsibility of discussing the center's result with the candidate. Otherwise, assessors or former assessors are given the responsibility.

The USAIS [125] provides the following counseling guidance to their assessors:

1. The following is an outline provided to facilitate counseling feedback based on assessment exercises. The collection, collation and feedback of the information will take place as follows:

- A. The Computer Group will provide each counselor a packet of information relative to the individual he is assigned to (counsel). This packet will contain a computer printout of all rating scales arranged by dimension, and the narrative portion from each exercise. A summary sheet containing information which relates to each assessee derived from paper and pencil tests will also be included in the packet.

- B. The information given to the assessee will center around the dimensions . . . (specified). The counselor is charged with assimilating the information from the various exercises into the dimensions for counseling feedback.

- C. The counselor will prepare his counseling interview in the following steps:

- STEP ONE: Read the narrative portions from each exercise to get an overall impression of the assessee.

- STEP TWO: Study the computer printout and paper and pencil test results.

- STEP THREE: Prepare a Narrative Report describing the individual. This report will follow the dimensions . . . (listed). The report will contain all relevant information from the narratives, the computer printout, and the paper and pencil test summary sheets. This report will serve as the basis for the counseling interview and for ARI two year follow-up.



STEP FOUR: Prepare the counseling interview. The sequence of dimensions covered should meet the following criteria:

a. The first dimension selected should be the strongest of the assee's relative abilities.

b. The initial dimensions should be the easiest to present from the perspective of action the assessee can take to address his weaknesses.

c. The dimensions in which the assessee is weakest should be in the middle of the sequence.

d. A dimension in which the assessee did relatively well should be reserved to conclude the interview.

STEP FIVE: Review and select tapes to support the interview.

(Notes: (1) The 14 leadership dimensions assessed are: Social Skills (Interpersonal Competence), Communications Skills, Adaptability, Motivation, Forcefulness, Mental Ability, Decision Making, Administrative Skills, Organizational Identification, Effectiveness in Organizational Leadership Role, Supervisory Skills, Physical Competence, Technical and Tactical Competence and Problem Solving Ability.

(2) Step Five refers to the preparation of a 5-10 minute videotape which the counselor records from the videotapes of the leaderless group discussion and the candidate's interview of another role-playing candidate. Interviews with the USAIS assessors disclosed that the edited videotapes were a powerful counseling tool and were often able to dramatically convince candidates who had doubted the verbal feedback on certain specific points.)

Finkle and Jones [85] again provide a thorough, although specific, description. They detail the feedback procedures employed in the Sohio assessment program which are somewhat atypical in that they use psychologists to conduct the feedback sessions, where most programs utilize lay assessors. In spite of this, the description contains a great deal of general information which is applicable to any feedback system. They write:





. . . two basic problems quickly arose when considering the feasibility of a feedback session . . .

The first of these problems concerns the cost of the feedback in both time and money. The other, and even more important, relates to the possible misinterpretation of the results by the assessee and the consequent damage to confidence and desire that may ensue.

With full realization of the problems involved, we decided to follow through with a feedback session for any assessees who were interested in requesting one. Weighed in our deliberations were the following considerations. The cost is not great relative to the investment already made in the program. It has been our experience that an assessment feedback requires at the maximum an hour and a half time and more typically forty-five minutes to an hour. When assessees operate in areas remote from the home office location of the psychologist, it is often possible to arrange a meeting when the psychologist is at a nearby company location for other purposes or when the assessee has occasion to visit the home office on other business.

Furthermore, the cost must be weighed against more intangible outcomes. It is impossible to calculate the amount of resentment toward the company that might develop in some assessees if they felt that pertinent information concerning their personal qualities was being deliberately withheld from them by management. The loss of a well-qualified individual as a result of such antagonism would be a real loss to the company. Also, the cost question must be evaluated against the possible gains in personal growth that the feedback might foster. We will return to this issue a little later.

The possible negative effects resulting from misinterpretation of test findings or the indelicate handling of the reporting of the findings to the assessee can adversely affect an assessee and the usefulness of the program. Indeed, even though the feedback is conducted by a psychologist, the likelihood of misinterpretation or improper handling is only lessened--not eliminated. Yet there is no assurance that distortion and misinterpretation do not also arise in the absence of a feedback. Obviously, each of the assessees speculates, at least privately, about his own abilities vis a vis the other participants during the various group exercises in which he is involved. How realistic these self-appraisals are depends upon a number of things, including the maturity and insight of the assessee, his previous experience in similar situations, and his confidence in his capabilities.





Without the opportunity to test his own interpretations against those of the assessment staff, the assessee may well err either in the direction of being a bit too optimistic or pessimistic concerning his future prospects with the company. In extreme cases he could develop a totally unrealistic outlook regarding his potential for advancement. Thus the feedback should further the ability of the assessee to better analyze and interpret his performance and the possible implications of this relative to his career aspirations.

The goals of an effective feedback therefore are twofold: (1) to provide the assessee with an opportunity to compare self-evaluation of his performance with the interpretation of the assessment staff and (2) to provide him with the appropriate amount of feedback information in a growth-oriented context that makes the information as acceptable and valuable to him as possible.

### Initiating Self-Development

The major portion of the writings of psychologists and psychiatrists supports the view that the starting point in any self-developmental effort is a willingness on the part of the individual to examine himself and determine his current abilities as carefully as possible as a foundation for formulating personal goals involving change. To be sure, the task of personal growth is at best difficult to govern and achieve. For in addition to a motivation to better fulfill his potential capability, an individual needs a means of seeing himself as clearly as possible as he is. Actually, the assessment program offers assistance in this respect in at least two major ways.

First, there is considerable opportunity during the course of the three days of assessment to critically examine oneself. On the measures of intellectual ability, the assessee comes to grips with the fact that he can handle some types of intellectual tasks more comfortably than other types. Many of the attitude and personality inventory tests force him to examine his beliefs and his personal style. Also, the personal interview confronts the assessee with the question of personal goals and his evaluation of his own strengths and liabilities. In the group exercises the assessee has the opportunity to see how other young businessmen tackle problems and conduct themselves in a competitive climate. Finally, when completing the final sociometric questionnaire at the conclusion of the program, he becomes very much aware that not only is he evaluating others in terms of their type of personal impact, but that they also are evaluating him. Naturally, he wonders how he impressed the others during the three days of formal and informal interaction.



For many of the employees this is the first time that they have really stopped and taken a look at themselves in depth. Prior examinations have typically focused on intellectual characteristics only. From various college quizzes and aptitude tests, they have gained some insight concerning their standing relative to general population or student norms. There may have been some vocational or educational counseling at the time of the selection of a college and career. With few exceptions, however, they have had little occasion to pull back and reflect upon themselves as individuals in a broad sense.

The second means by which the assessee receives assistance in self-development comes in his opportunity to receive a feedback concerning the interpretation of his performance and a chance to discuss himself and his future with a member of the assessment staff. Such a discussion, if well handled, can become the basis for more sound career planning and provide both a clearer focus and direction to personal developmental efforts. In short, the feedback session should further the objective of personal growth for those who are so motivated.

#### Personal Feedback--Not Performance Appraisal

Because a performance appraisal interview and an assessment feedback both deal with an individual's behavior in a work situation, we can further understand the nature of the assessment feedback by comparing the two. If the assessee has had performance reviews concerning his accomplishments on the job at fairly regular intervals, he will expect the assessment feedback session to be rather similar. However, this is not the case for the following reasons.

Basically, there is a pronounced difference in the objectives of the two sessions. The goal of a performance appraisal discussion is to provide the individual with knowledge about how his specific job performance has been regarded for a stated period of time, usually one year. By contrast, the assessment feedback deals heavily with the effects that personal characteristics have on the assessee's present and potential capacity to contribute productively in a business setting.

It is widely held that performance appraisal review sessions have their most constructive effect when the discussion centers about the accomplishment or lack of progress on agreed-upon work objectives. Discussion can then proceed to a consideration of the implications this performance has for the attainment of future work objectives specific to the individual's current job. However, when the appraisal session moves away from the focus on objective results into an examination of the underlying behavioral characteristics that made the performance



possible, the defensiveness of the subordinate increases as the ability of the supervisor to evaluate this area effectively comes into question. Some discussion of behavioral characteristics is perhaps unavoidable, but the temptation to revamp the subordinate as a person is difficult to resist and there is danger that the session will digress nonconstructively from the task of providing knowledge concerning job progress and future work plans.

By contrast, the assessment feedback is less effective to the extent that it becomes too related to specific job performance. Illustrative examples may be gleaned from the assessee's current job performance, but the emphasis is clearly upon the person as a contributor to the organization in general rather than upon his behavior in a given assignment.

Another factor differentiating the feedback from the performance appraisal is simply who conducts it. This distinction arises from the different objectives and the relative appropriateness of the manager to deal with the information to be covered. Most employees accept the concept that their manager is a legitimate authority to evaluate the results of performance in relation to agreed-upon job objectives and responsibilities. Far fewer regard their managers as holding the prerogative to either assess or attempt to change basic behavioral characteristics which in turn influence the attainment of work results. Therefore, when the manager moves into these areas, the subordinate's defensiveness increases.

Essentially, the reverse is true for psychologists. Many question the capacity of the psychologist as an evaluator of the extent of accomplishment of specific job goals. However, many probably agree that as a result of training and experience the psychologist is likely to have suggestions concerning change in personal qualities that might yield dividends in improved personal satisfaction and accomplishment.

Also the psychologist stands in a different power relationship to the assessee than the manager. Although the psychologist may be recognized as a representative of the company, there is little perception of the psychologist as holding any immediate real power over the assessee's future as is the case with his superior. The impact of power in a relationship is such that there is an increase in defensiveness and a decrease in exploratory and creative thinking. Thus even though a manager may have a positive superior-subordinate relationship with the assessee, the inherent power structure tends to have a dampening effect upon the amount of personalized information that might be exchanged. Basically, then, both the perceived legitimacy of the psychologist to offer suggestions in the area of





personal growth and the neutral power relationship increase the likelihood that the assessment feedback will become a session in which there is a meaningful focus upon personal qualities and formulation of growth-enhancing plans.

In summary, then, the differences between appraisal feedback and assessment feedback in objectives and personnel involved should be clear to those involved. However, these two activities do have a complementary relationship to one another. Both activities are directed toward improving performance and providing guidelines for further development. Ideally, both will serve as vehicles for the individual to evaluate better his current performance and perhaps gain further insight as to how he can capitalize most effectively upon the stronger aspects of his performance and adjust other attributes if his capabilities and background suggest that this is a feasible alternative.

Here again the manager and the psychologist both work to develop and to utilize better the individual personnel resources of the company. The manager's emphasis in working with the individual is on the "what" and "how" aspects of his results. At the same time the psychologist can help the individual better understand the "why" of his behavior and gain a better understanding of "where" he is apt to find satisfying application of his talents.

### Starting the Feedback Session

Let us turn to the mechanics of the feedback and two important questions: How should the session begin? How much information should be conveyed? These questions can be best handled if we keep constantly before us the preceding discussion and remember the objectives of the feedback session. In actual practice the conduct of the feedback session created several problems for us early in the program. A large portion of these problems arose from the fact that insufficient attention was paid to the context of the session.

For example, our early feedback sessions were too much concerned with a one-way report back to the assessee of major assessment findings. The criterion for a successful feedback thus became that of full coverage of information, though this criterion was not articulated and explicit. Consequently, assessees were sometimes given information that was perhaps interesting but of questionable relevance to their own perception of their career objectives and personal needs. Had we been more fully cognizant of the full role the feedback session can play, we would undoubtedly have been quicker to see the joint problem-solving nature of the feedback session.



Another difficulty of our own making was to approach the feedback task with the rather naive assumption that all assessees aspire to positions in top management. The feedback information was presented to the assessee in the perspective of the assets necessary to progress to top management. As a result we were often placed in a position of indicating to someone who had modest aspirations in the first place that his prospects for advancement to positions of heavy responsibility were quite slim because of the lack of relevant personal qualities. With the advantage of hindsight, we now recognize that the position we had worked ourselves into was not unlike that of a talent scout for the Metropolitan Opera telling an average church choir member that he had little prospect of success as the male lead at the Met. Even though the choir member had no operatic ambitions, he would be a bit chagrined at the appraisal of the scout. Likewise, our assessees who had neither the aspiration nor ability for top management responsibility were nevertheless discouraged and resentful on receiving information couched in a top management frame of reference.

In these early feedback sessions, it was particularly painful to anticipate and conduct a feedback with someone who had performed poorly throughout the assessment session. However, when we changed the feedback from a simple reporting of results to a problem-solving effort, even these sessions became manageable and productive.

Fortunately, even those who had done poorly in the assessment session either had an awareness of this and had adjusted their aspiration level accordingly or did not have unrealistically high ambitions initially. We have found that when an individual is given an opportunity to describe what it is that he wants from his business career, very few men express aspirations higher than the assessment staff felt they were likely to attain. Once the assessee outlines his objectives, it becomes possible to relate his performance to these objectives. Also, by obtaining very active involvement from him early in the session, it is easier to maintain the session as a joint effort rather than to try to introduce artificially a two-way information exchange such as had characterized our early efforts.

Quite often an assessee states that he wants to progress as far as his abilities will permit, which is perhaps a subtle way of asking for the assessment staff's rating of his potential. In discussing potential it is important to stress that his potential depends upon his own talents and efforts, upon his exposure to jobs and people in order to best use and prove his abilities, and upon environmental conditions, including the need for his talents, the



availability of similar talent, and a grain or two of good luck. We have found it most effective to concentrate on talking about the relative strengths and weaknesses he has and discussing, in general, how he can continue to grow in effectiveness as a person.

### How Much Information

The question of how much information to provide is also a thorny issue which is best resolved in each specific case by remaining alert to the counseling context of the feedback and the stated goals of the assessee. The assessment findings should be evaluated and integrated in such a way as to meet the assessee's needs rather than simply be presented in a "take-it-or-leave-it" fashion without such integration and interpretation. Little is gained by giving him the "straight scoop" without an attempt to relate it to his individual desires and experience. Specific performance on a given test or exercise may be used to illustrate a broader characteristic, but the overriding judgments of the committee are the principal subject for review.

Overall, it is valuable to keep the discussion focused on a descriptive level which is more integrative than evaluative. For example, "You seem not to take full advantage of opportunities to tune in to the needs of others in your thinking and action." Inference is made without condemnation. An idea is offered for discussion and as much as possible the session is oriented about what the assessee is ready and willing to accept.

As long as the session is directed toward description and interpretation in the interest of self-understanding, there is less likelihood of distortion and difficulty. Nor is there danger in discussing the implications of present characteristics for the type of person the assessee hopes to become and possible steps to take or questions to ask himself as he moves toward his objectives. However, danger does exist in trying to discuss areas that are essentially beyond the control and management of the assessee himself or the psychologist with whom he is working.

One of these areas is the question of long-range potential as evaluated by the assessment staff. We have already expressed our feeling that the information can be most often misinterpreted because it is abstract, future-oriented, and subject to so many variables outside the assessee himself. Yet one of the basic questions the assessee wants answered when he requests a feedback is how much potential for advancement he is regarded as having. His question probably stems from a need for the security of reassurance that his fate is not sealed and his value to the company short-lived. Actually, this reassurance can be given to most assesseees





without the necessity of delving with great precision into the estimate of potential. The selection criteria for the program are such that few if any problem cases are evaluated. Therefore it is almost always possible to say to the assessee with sincerity that he has potential for growth within the organization. This fact, combined with the general realism of the expressed objectives by the assessee, places the question of potential in proper perspective. Most important, no assessee should be left with the feeling that a ceiling has been established for him. He should recognize that any estimate of potential is just that--an estimate. Many circumstances, foremost of which is the assessee's own application and development of his abilities, can affect his potential.

Beyond the general question of potential, there are other limitations that it may be desirable to place upon reporting the data to the assessee. Thus specific jobs as opposed to job families should not be discussed with the individual as possible future placements. It should be remembered that specific job titles are developed in the integration session simply to exemplify better the type of position that would capitalize upon the assessee's strengths. These are examples only. When discussed with the assessee, special care must be taken to make sure the individual understands the illustrative use of the position. Otherwise, the individual is apt to begin thinking in terms of a specific job and be disappointed if it is not soon offered even though a future proffered position may actually meet his needs and the company's needs more effectively.

Likewise, to the extent that the areas of supervisory climate and training are discussed, it is desirable to discuss only those things over which the assessee has control. In speaking of his relationships with authority, it is well to avoid any discussion of his immediate superior unless the assessee brings up the topic. Frequently, the psychologist conducting the feedback has information concerning the superior. Discreet use of this knowledge may be helpful in aiding the assessee in his relationship with the superior, but most often the psychologist will do well to remember that the focus of the feedback is the assessee--not his supervisor. Frequently, the assessment staff recommends outside advanced management programs as company-sponsored training activities for the assessee. It may be useful to advise the assessee to keep himself open and receptive to training opportunities his management provides, but beyond this there is nothing to be gained by discussing specific programs where the assessee does not control the selection. However, any relevant activities the assessee can initiate fully on his own should be openly and fully explored.





## Feedback--Oral or Written Report

Our feedback sessions have been completely oral. This has provided us with desirable flexibility and has permitted a full "back-and-forth" discussion with each assessee to assure better understanding. However, even with oral feedbacks there is the danger that misperceptions may arise and go completely unnoticed by the psychologists. There is also the disadvantage (at least in the eyes of the assessee) that he has nothing tangible to carry away with him from the session.

Though we have not employed a written report for assessees at Sohio, such an approach could of course be considered. Presumably it should be descriptive in nature and similar to the one provided for management.

An extension of the arguments favoring a written report for the assessee would lead to the conviction that he should simply be given a copy of the report prepared for management. Another view might be that he should be given all detailed information in terms of test scores, interview reports, exercise reports, and so on that were used by the integration committee in forming its judgments.

Our objective in establishing the most effective feedback approach has been to maximize understanding on the part of the assessee as to what has been concluded about him, how it will be used, and how it is likely to affect his career with the company. We doubt that an open presentation (even "explaining") of "raw" data best serves this purpose in the light of the complexities of the techniques and exposures used to obtain the data and in view of the nature of the multiple judgments contributing to the conclusions. A written report may be justified but not if it cuts off discussion that gives the psychologist himself feedback as to the progressive understanding of the assessee in the feedback process. Oral feedback, when well handled, seems to do the best job of developing full and accurate understanding.

It should be remembered, however, that we are seeking to provide the assessee with an understanding of the significance of the information for his career as well as of the content of the information itself. Perhaps the best indicator of this understanding is a reading by the psychologist of the assessee's emotional reaction to the feedback session. Signs of disappointment may often indicate a misunderstanding either of the information or its significance. For persons who have an excessively unrealistically high level of aspiration, discouragement is to be expected. For most individuals, however, the overriding reaction to the feedback is constructively accepted. Our experience suggests that



the persons most likely to feel disappointment are neither those with exceptionally great talent and potential nor those with relatively modest or narrow abilities but, rather, those with skills, abilities, and interests that are about average or a little better than average for the population of individuals recommended for the program. This is, perhaps, somewhat like the reactions of "B"-level students in school. They experience neither the relief of the "C"-level student, who may have had some doubts about passing, nor the satisfaction of the "A"-student who, though he may have expected it, is rewarded with the highest possible mark.

There are several ways to help this "level" of person achieve an appropriate understanding of the assessment information and its significance for him. The psychologist must remember that the results of the program confirm that the assessee is exceptional in ability and potential. Those selected by management to attend were seen as more talented and as having greater potential than their peers in the work setting. The assessees we are now discussing were seen by the assessment committee as having as much or more talent and potential than the typical, well-recommended assessee. Clearly, the psychologist should focus on the confirmation of prejudged ability rather than on the point that some have been seen as having even more talent and potential than the assessee being addressed. Beyond this, it is important to reiterate what should have been told the assessee prior to the program and what certainly has been pointed out more than once at the program, namely, that the primary objective is to establish and reflect on the individual's strengths so that, through his greater awareness of these strengths and the company's greater awareness of them, they can be more quickly and more appropriately applied. Finally, it should be emphasized that an individual's potential depends upon opportunity, exposure, performance, and upon the judgment of one or more key people who have the authority to affect the individual's progress. The assessment program operates primarily to improve exposure. The contribution the individual makes in the eyes of those he is working for and the opportunity those persons have to increase his responsibility are still the primary determiners of his career advancement. Each person's future depends upon the extent to which someone who feels that person can make a stronger contribution in the organization is in a position to do something about it.

Because of the critical importance of properly designed and executed feedback sessions, it is considered important to close this section with some additional words of caution concerning possible damaging effects which can



result. Meyer et. al. [49] report the following findings from a study done at General Electric:

The average G. E. employee's self-estimate of performance before appraisal placed him at the 77 percentile.

Only 2 out of 92 participants in the study estimated their performance to be below average.

Commenting further on these findings, Thompson and Dalton [63] write:

. . . The probability is, therefore, that for 70% to 80% of all technical personnel a comparative ranking would be a deflating experience. Certainly, all would feel criticized, and those who asked for the reasons for their unexpectedly low rating would receive more specific criticism. Judging from the G. E. findings, this would have a disruptive effect on the performance of most of them. In addition, it would have a negative effect on their self-esteem.

The message voiced repeatedly in these, and other, articles is that feedback of results is one of the more difficult and crucial factors in the design of an assessment program. Thompson and Dalton [63] express it well:

Performance appraisal touches on one of the most emotionally charged activities in business life--the assessment of a man's contribution and ability. The signals he receives about this assessment have a strong impact on his self-esteem and on his subsequent performance.

Although the comment concerned performance appraisal, this writer considers it to be equally applicable to assessment center results.

## 6. The Big Picture: Integrating the Subsystems

The need for an integrated systems approach to personnel management was mentioned in Section I of this paper. The literature supporting that need will now be reviewed.





The basic problem is stated thus by Bray and Moses [76]: "What is missing is a unified system that integrates manpower planning, selection, training, and development."

Amplifying this, they continue:

There is a heightened awareness that selection procedures do not operate in a vacuum but are part of a system. The appropriateness of a particular selection standard depends not only on the way the job is structured, but upon the type and duration of training, as well as other factors. A systems view of selection appears to be increasing in prominence. Perhaps we may one day see a cohesive theory of man and woman at work.

. . . Most of all, there is a strong probability that we may move from selection systems per se to placement systems. To do so will require serious integration of existing systems, an area which is still in an embryonic stage.

Miller [50] states the need in slightly different terms:

The development of behaviorally-relevant job criteria, the comparison between relevant job behavior and an individual's previous work experiences, and the emphasis on planning an individual's work assignments in order to acquire a variety of samples of his job behavior are all integral elements of a career mobility program and a behaviorally-oriented identification program. There should, therefore, be an interdependence between them. The combination of an identification program and a career mobility pattern program should lead to more accurate selection decisions and consequently more effective utilization of managerial personnel.

Thompson and Dalton [63] address performance appraisal, and suggest that a single system is not adequate:

. . . Resist the temptation to devise one grand performance appraisal system to serve all management needs. Managers do have to make decisions about assignments, promotions, raises, and layoffs, and they also have to discuss performance with each man. There are different and sometimes conflicting objectives in each of these activities; tying them into a single rationalized system may make the system less than useful for any one purpose.



Management's own needs for uniformity and consistency should not be allowed to impose a rigid system that makes impractical demands on the dynamic human organization. This does not mean that each of these activities should be planned in isolation. On the contrary, the entire method of handling performance, salary increases, promotions, and job assignments must be considered together.

In explaining their reasons for such a philosophy, they write:

The appraisal system is a very poor counseling tool. It's possible to evaluate a man's performance, but it's very difficult to write your evaluation down on paper and then defend it to the engineer. Therefore, in the counseling session, you try to anticipate how he'll respond to his rating three months later. If you think he will be dissatisfied and complain about it, then you only write down his faults. You don't tell him he's done a good job even if he has. In fact you don't counsel the man at all; you just try to build a case for the rating you will later be giving him.

The appraisal system favored by Thompson and Dalton is MBO.

They compare it with conventional techniques as follows:

Writers have advocated a management-by-objectives appraisal system for many reasons. Douglas McGregor, for example, favored it as a way to help a manager stop "playing God"--that is, judging the personal worth of his fellow man. Alva F. Kindall and James Gatzert were concerned about "quackery"--noting that under conventional performance appraisal, the manager was asked to diagnose personality traits. For them, concentration on target-focused appraisals assured a healthy emphasis on the task. Herbert H. Meyer, Emanuel Kay, and John R. P. French were able to show that criticism had a negative effect on achievement of goals, and that performance improved most when specific goals had been established.

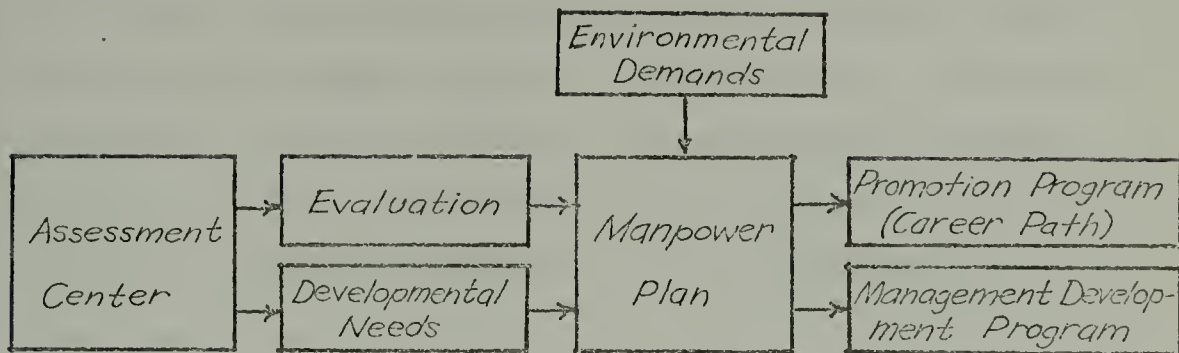
Slevin [59] offers a model depicting the relationship and contribution of the assessment center within the larger system:

The assessment center seems promising as a new technique for the selection of future managers. However, the most effective utilization of this technique will combine not only the appraisal function, but also the management developmental function of the center. The flow chart shown in Figure (12) indicates the way in which the assessment center can be used in a two pronged attack on organizational development.



Figure 12.

Use of the Assessment Center as an Appraisal  
and Development Tool



Source: Slevin [59]

The assessment center is conducted in usual fashion with an emphasis on both evaluation and the diagnosis of developmental needs. These two variables may then be fed into an over-all manpower plan. This plan takes into account the environmental demands on the firm and the projections of future manpower needs in various areas. Based on his own competence and what his developmental needs are, an individual will be plugged into two plans: a promotion program that is specifically constructed for the individual, and a management development program. The promotion program specifies a career path that the individual is likely to follow in the organization. The management development program focuses on the difference between the individual's current competence and future needs as defined by his tentative career path. Using both the promotion and management development programs, the organization can implement an effective and farsighted manpower plan.

In conclusion, evidence that these concepts are not merely theories but can be attained in practice is offered by Campbell, et. al. [78]:

Practices in this company represent one of the few examples we found of a careful blending of validated selection methods and the use of informed and systematic appraisal methods for administering incentives and tailor-making development programs. Thus, the testing, compensation, and salary systems as well as the effective use of both company and noncompany training programs are geared toward identifying, developing, and motivating effective people to become effective managers.





No other company we visited had a program the same depth of coverage even in single areas that this company's practices show in all the key areas.

## 7. Unresolved Problems

The report of a seminar conducted by the Foundation for Research on Human Behavior [112] contains a listing of questions for further research. Although this list was compiled in 1957, this review of the literature has not disclosed significant progress on them and they appear to be as timely as they were in 1957. The listing is as follows:

To what extent is improvement possible in the various managerial characteristics that are related to job-effectiveness? To what degree are managers born and not made? Are certain key attributes resistant to change? If so, perhaps more emphasis should be placed on selection and placement procedures. Are most key attributes capable of being developed? If so, perhaps more emphasis should be placed on training.

The future demand for managerial talent will not permit organizations the luxury of accepting only men with "no weaknesses." In what ways can an executive be helped to overcome his weaknesses? What strengths can be developed to compensate for these weaknesses? What characteristics in supervisors, peers, and subordinates can be sought to offset these weaknesses? What modifications can be made in a man's job-description or in organizational structure to take these weaknesses into account and yet maximize returns from his strengths?

What procedures can be used in dealing with the "non-promotable" man, the man who is adequate in his present position but has reached his limit? In what ways can he be helped to lower his aspirations without destroying his motivation?

What procedures can be used in dealing with the subordinates of the "non-promotable" man? What opportunities can be provided for the subordinates to continue their development? Should they be rotated through other units? Should the organization assign the non-promotable supervisor activities which will take him away from his position frequently and permit subordinates an opportunity to understudy him? How may the tendency for low-grade supervisors to attract low-grade subordinates be dealt with? Are there ways in which the non-promotable man may be made more secure





in his position so that he will be less threatened by subordinates and hence be better able to develop them?

What changes occur in an executive after he assumes a new managerial position? What effects do experience on the job and being "in the role" have on his competence? Can these post-promotion influences be predicted?

In studying successful performance, how much error is introduced by contrasting "more successful" and "less successful" groups of managers? Presumably, some random situational factors (non-promotable boss) were responsible for the differences in achievement of the two groups. More important, however, possibly some systematic factors (power tactics?) unrelated to the goals of the organization were responsible for some managers being promoted and others not. How does one take into account the effects of differential mobility in different departments? Does test research based on such "success" criteria tend to perpetuate errors?

Are established principles of management development fully utilized? For example, are fledgling managers permitted a sufficient proportion of "success experiences" early in their career to enable them to acquire self-confidence and maintain a high level of aspiration? Does management pay enough heed to the fundamental law of learning: heavy on reward, light on punishment? What proportion of its management talent does an organization waste by using the sink-or-swim method of training managers?

To what degree does success breed success, and failure breed failure? Does success provide self-confidence which enables a man to be more imaginative, independent, original, and assertive? Does failure lead to increased fear of failure which prevents a man from making decisions, or admitting ignorance by asking questions? To what degree is success or failure a circular, self-perpetuating process? If so, what modifications in management development, job assignment, etc., can break the failure circle and reinforce the success circle?

To what extent do managerial jobs impose rigid patterns of behavior even when other equally satisfactory ways of achieving organizational objectives exist? One participant phrased the question as follows: Is managing like fighting bulls or playing baseball? The bullfighter cannot achieve success by merely killing the bull. He must pattern the smallest details of his performance to the rigidly held expectations of a number of people. The baseball player, on the other hand, can achieve success by maintaining a high batting average or by being an excellent ball hawk. It doesn't matter whether he bats with his "foot in the bucket," or whether his fielding is awkward. All that



counts are results. Is an executive judged successful on the basis of results alone or must he achieve results in a certain way?

In summarizing her recent study of current assessment programs, Howard [34] identified future research needs as follows:

A number of issues have been raised in this review that need to be researched, and undoubtedly there are many more. A brainstorming session at the Center for Creative Leadership of the Smith Richardson Foundation produced a list of over 100 relatively unresearched questions concerning assessment centers [38]. All the components of the process and their integration can be studied more intensively, as can the potential uses of assessment procedures with such organizational problems as personnel selection, training, motivation, job analysis, job satisfaction, and organizational climate.

Aside from the as yet unexplored research questions, the importance of situation related validation research for those attempting to use assessment centers should be emphasized. Because their initial industrial development was grounded in research, it is often casually implied that therefore any assessment center will work. It is true that AT&T laid a solid basic foundation in its pioneering predictive validity research. Some other large companies have also contributed to the . . . (current knowledge of assessment center validity).

Howard goes on to add that future program designers cannot expect to crowd under AT&T's validity "umbrella," but rather must tailor both program and validation design to their specific situation. She further emphasizes the importance of utilizing the feedback from validation to refine the assessment program and keep it aligned with the demands and dictates of the environment.

## 8. A Critique of the Literature

In the opinion of this writer, the greatest weakness of the literature on assessment centers is that it rests on too narrow a data base, e.g., although there are a great



number of articles, the bulk of them are by a relatively few authors and about a small number of programs. It is speculated that AT&T, Sohio, IBM, AMA, Sears, J. C. Penney, and General Electric's programs together would account for an overwhelming majority of the literature--indeed, the first three would probably contribute 40 to 50% of the total.

Although the reason for this is the fact that the concept is still relatively new, the increase in numbers of programs will not, by itself, solve the problem, for quality is needed as well as quantity. This is to say that more research of the caliber of the Management Progress Study is required if we are to resolve the important problems still facing us.

#### C. DESIGN OF A PROTOTYPE ASSESSMENT CENTER FOR THE NAVAL POSTGRADUATE SCHOOL

##### 1. Assumptions

a. Candidates would be U. S. Naval officer students in their first quarter of the 817 Management curriculum of the Naval Postgraduate School.

b. Assessors would consist of a mixture of U. S. Naval officer students and faculty of the Naval Postgraduate School. The student assessors would be selected from students in their fifth quarter.

c. That sufficient flexibility could be obtained in the curriculum to allow tailoring of academic programs to individuals in accordance with assessment findings.





d. That the primary objective of the assessment program would be research (regarding selection, placement and development) with a secondary objective of development.

e. That the program would focus on the managerial facet of the Operational, Technical, Managerial Systems (OTMS).

f. That research data collected would be privileged and not divulged outside of the prototype assessment center staff.

## 2. Philosophy

a. In perspective, assessment centers would only be subsystems within the larger system of personnel management within the U. S. Navy. The assessment centers would, of necessity, interface with many other subsystems such as initial selection, development, placement, selection for promotion, and performance appraisal. Of these (hopefully) complementary subsystems, performance appraisal--like assessment involves the dual roles of selection and development.

This writer proposes that appraisal for selection purposes should be completely separated from appraisal used for feedback and/or development. Research has shown that selection ratings are enhanced by confidentiality. Peer and subordinate ratings also have potential in this area and are worthy of investigation. Several articles deal with this subject, including three cited earlier in Section III B h, Peer Ratings (e.g., Kraut [39], Amir et. al. [2] and Hollander [33]). All of these supported the use of peer ratings for prediction of later performance. Githens and Elster [113]



found subordinate ratings to have potential, but that their use was considered threatening to the majority of Naval officers surveyed. Ideally, selection appraisals should be specifically designed to complement the assessment center results and should concentrate on those dimensions which can be best observed on the job.

This writer offers management by objectives (MBO) as the best vehicle for the developmental aspect of performance appraisal. Articles on MBO abound in the literature, however McGregor's classic [47] remains one of the best. He condemned "conventional" performance appraisal and recommended analysis vs. appraisal where the superior would act as a coach instead of a judge.

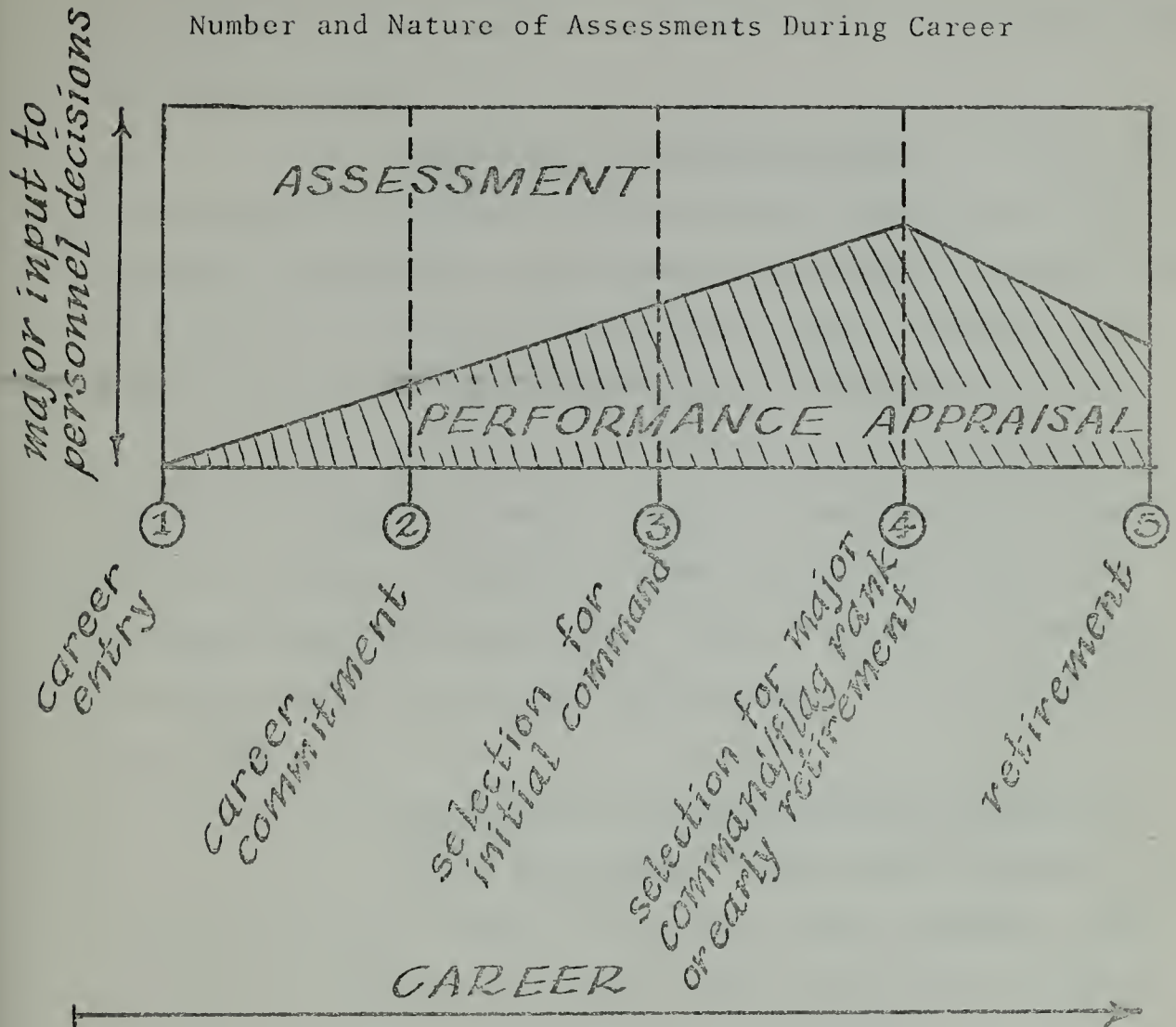
b. In the "ideal" system, as envisioned by this writer, more than one assessment would be performed during a career and the objectives of each would differ. The concept could be modeled as shown in Figure 13. The assessments indicated in the model are explained as follows:

(1) Career Entry. Since no performance appraisal information is available (or at least none in the job being applied for) the hiring decision would be based solely on assessment data. This process would involve large numbers of candidates, thus, would have to be as short as possible while still obtaining valid results. The AT&T one-day Early Identification Program described by Moses [51] is an example of this type of program. Selection would be the primary objective, and the brevity of the program would virtually rule out any developmental aspects.



Figure 13.

Number and Nature of Assessments During Career



(2) Career Commitment. This point would occur after four years of service, when the officer had completed his obligated service and elected to remain in the service as a career. Such a candidate would be in the rank of Lieutenant and, if a line officer, would have completed his first operational (sea duty) tour and be commencing his first tour of shore duty. He would soon be faced with the decision as to which career path to choose (Operational, Technical, or Managerial), and an assessment should provide information



not obtained in his performance appraisals which would enhance the quality of this decision--to the benefit of the individual and the U. S. Navy.

(3) Selection for Initial Command. By this stage of a career the difference in career paths make any "norm" selected a little less representative, however it should occur at about 12 - 15 years of service at a rank of senior Lieutenant Commander or junior Commander. This decision is a crucial one for the individual as well as the organization. Since it represents a marked change in the degree of responsibility and scope of decisions required of the officer, an assessment can help combat the "Peter Principle" by probing those key factors of command which have not yet been evaluated on the job.

(4) Selection for Major Command/Flag Rank or Early Retirement. Once again the degree of responsibility and scope of decisions take a quantum jump, therefore the benefits of assessment cited in the previous section would apply here as well. For officers retiring early, an assessment could provide them with an inventory of their attributes to assist them in deciding on a second career.

(5) Retirement. Same considerations as early retirement previously described. This could be viewed as a sort of "Project Transition," and although the direct benefits would accrue to the individual, the organization might benefit indirectly from such a "personalized" personnel management





policy, e.g., such a benefit might make a Naval career much more attractive to young officers thereby enhancing the overall quality of the officer corps.

It should be noted that the emphasis is on selection initially, but there is a gradual shift toward development as the career progresses, until at the end, inventory and/or development are the primary objectives.

Another potential objective is that of placement. By ascertaining an officer's strengths and weaknesses with an acceptable degree of accuracy, it would be possible to place him in billets better suited to his talents--as advocated by Fiedler [19]--thereby making better use of the human resources of the Navy.

c. Assessment programs can be classified according to their use of signs and/or samples. "Psychometric" programs emphasize signs, while at the other end of the continuum, "behavioral" programs emphasize samples.<sup>1</sup> Most current programs fall nearer the middle of the spectrum and assess both signs and samples.

d. Design of the assessment program should be based on the best available information. In this writer's opinion, the best base would be data obtained from a quality research effort. An alternative would be to obtain the data from a panel of "experts," however the validity of such data would be questionable.

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<sup>1</sup>The author realizes that all signs are samples, but whether or not a sample is a sign is a matter determined via validation efforts.



A decision would have to be made as to whether an officer could be selected on specific dimensions unique to a billet (or family of billets) or whether the heterogeneity and number of billets would force an assessment of the "whole personality" on general dimensions as was done by the O.S.S. [99]. This decision would properly require thorough job analyses which would define the billets and enable judgments as to which (if any) might be combined into "job families." These job analyses should be behaviorally-oriented to identify significant job dimensions which can be measured by observable behaviors (for subsequent design of the assessment program).

### 3. Program Considerations

#### a. Objectives

(1) Primary. The primary objective of the prototype assessment center would be research focusing on the selection and placement of managers. Virtually all of the data obtained on this aspect would be held in strict confidence by the assessment center staff.

(2) Secondary. A secondary objective would be the individual development of participants, both candidates, and student assessors. The goal would be to produce a personal development plan for each candidate which could be translated into an individual curriculum. Although the substantive differences between individual curricula might be small, the participative involvement of the student in the determination of his academic program could produce significant improvement in satisfaction, motivation and, ultimately, performance.



b. Content

For a research-oriented program such as this, a mixture of signs and samples is considered to be the prudent choice. This would offer a full range of instruments for validation and enable the validation process to indicate which are most effective. Any restriction of this (i.e., using only signs or samples to the exclusion of the other), would amount to "pre-selection" decisions without scientific basis.

c. Length

In view of the academic schedule which exists at the Naval Postgraduate School, this writer considers the five-day program to be the best length. This would roughly break down as three days of assessment followed by two days of evaluation and report writing by the assessors.

d. Administration

The academic schedule poses some challenging scheduling problems. One solution would be to make the fifth quarter of the management curriculum a "vertical" schedule for those students selected as assessors (e.g., the courses would be taken consecutively vice simultaneously). Assessor training could be conducted during the first week of the quarter, and then assessment of twelve candidates per week conducted until all candidates had been assessed. Since the candidates would only be involved for three days, their other course work could be scheduled lightly until assessments were completed and then the tempo increased to compensate.





#### D. DESIGN OF VALIDATION/EVALUATION/FEEDBACK SYSTEM

These systems would differ according to the objectives of the program to be evaluated. Their design should be accomplished at the outset before the assessment program design is undertaken as recommended in the O.S.S. "Assessment of Men" [99] as follows:

. . . appraisal is the target of assessment, and it is always well to see your target before taking aim. One should know ahead of time, for example, whether the target will be an objectively determined figure, such as the number of units of work a man completes per day, or a rating of his efficiency given by competent observers . . .

The point that is being stressed here is that whatever the determinants of appraisal may be, it is important to distinguish them at the start, so that the assessment program can be designed to take account of them.

It must be pointed out that the foregoing tacitly assumes the elements of appraisal selected to be relevant to the objective(s) of the assessment.

Once developed, the appraisal system should be tested on a number of "successful" members of the organization, if possible, and then revised as necessary.

A final consideration is that the rating scales for the assessment and appraisal programs should be identical on those dimensions which are shared by both.



#### IV. JUSTIFICATION

##### A. OF ASSESSMENT CENTERS

The Management Progress Study, and other AT&T studies which controlled for contamination, offer the most rigorous proof of the concept. In addition to these, one must acknowledge the amount of resources devoted to assessment centers by large profit-making organizations. This is not to advocate a blind policy of follow-the-leader, but the size of the commitments made (5 million dollar annual budget by AT&T [53]) are worthy of serious consideration, since no organization would commit such resources to a program unless they felt they were getting a reasonable return. AT&T has supported the concept for seventeen years and continued to increase its commitment with each passing year. The British and German military programs also represent heavy commitments of long standing.

##### B. FOR ESTABLISHMENT OF A PROTOTYPE ASSESSMENT CENTER IN THE U. S. NAVY

If one accepts the concept as valid, then the remaining question becomes: How to best utilize it within the Navy--vice whether or not it should be.

Some interesting and prophetic remarks in this regard were made by Rear Admiral I. E. Hobbs to students of the U. S. Navy Management School at Monterey [115] to wit:



Perhaps we should take a good look at what the Army is doing experimentally in evaluation procedures to try and measure an officer's interest and abilities in three fields of combatant, administrative, and technical. This is being done by two full days of achievement testing and then validated by actual field performance tests two to five years later.

This method of testing is somewhat similar to the German method used after World War I and used by the British and O.S.S. during World War II. It has considerable possibilities and should be carefully monitored by the Navy as a means of identifying truly outstanding officers in the fields of operations, planning and technical branches  
. . . .

The Air Force, through a special contract with the University of California, is conducting some very significant tests in evaluation of officers at their Squadron Officer School (AF opposite to the Navy General Line School) located at Maxwell Air Force Base. This effort consists of student peer ratings, situational testing during escape and evasion, instructor evaluation and other psychological procedures and techniques which are available but not generally employed. Through monitoring and observing these efforts the Navy might well learn additional techniques of identifying naval officers to man our fleet in the post 1970 era.

The prophesy was the mention of the fields of "operations, planning and technical branches" which recently became reality as the Operational, Technical, Managerial System (OTMS). The irony is that these remarks--timely as they sound today--were made on 20 February, 1959. In the ensuing years, assessment centers have not been disproved or lost favor, but rather, as Bray [68] puts it: ". . . have reached the critical-mass state and are ready to take off as more companies use them."

This writer submits that the advent of OTMS and the All-Volunteer Force have made personnel decisions even more important than they were in the past and increase the potential value of the assessment center to the U. S. Navy.



C. FOR ESTABLISHMENT OF A NAVY PROTOTYPE ASSESSMENT CENTER  
AT THE NAVAL POSTGRADUATE SCHOOL (NPS)

The Naval Postgraduate School offers a unique combination of candidates and assessors from a wide variety of specialties, backgrounds and ranks; and necessary supporting facilities. These facilities include videotape capabilities as well as a full range of other educational media devices, and a computer center. Some other significant factors are the expertise of the faculty (from Naval officers with operational experience to psychologists, psychometricians, etc.) and the liaison with NPS curriculum sponsors for continuous feedback on changes in billet requirements. In support of the objective of development, the school offers courses in a wide variety from basic skills such as reading labs, speech courses, writing, etc.; to more advanced work dealing with aspects of leadership, interpersonal skills, organizational development, problem solving, decision making and human resource management.

In considering the impact of a prototype assessment center upon the NPS, the following three objectives of the school are considered to be pertinent:

Foster an organization and provide supporting incentives at NPS in order to optimize utilization of resources to meet the learning requirements of the students.

Provide for continued studies in new programs, new techniques of teaching, better definitions of learning objectives and measures of effectiveness of our educational programs.

Provide for increased regard for individual diversity and needs on the part of students and provide an improved working environment for them.





This writer submits that significant aspects of all three of these objectives could be met by the proposed prototype assessment center. These benefits could go far toward offsetting the costs of the program. Also, because many of the costs represent sunk costs (computer center, educational media facilities, faculty, etc.) the actual out-of-pocket costs would be relatively low as compared to an industrial organization which had none of these.

In summary, the prototype assessment center could be established most efficiently at the Naval Postgraduate School and could benefit the school and the U. S. Navy by its existence.



## V. TASKS TO BE PERFORMED

A review of section III yields the following tasks yet to be performed: (The Interviews and Literature Review are considered complete as of this writing.)

1. Selection of criteria to be utilized in the evaluations. This would have to be done separately for each of the assessment objectives.

2. Job analyses of jobs (billets) for which candidates would be assessed. Observable behaviors should be considered separately, as they would be of special interest in the design of the simulations.

3. Based on the foregoing steps, a decision must be made as to the dimensions to be assessed, and further, on the number of different assessment programs which would be required. If there is a great deal of heterogeneity among the jobs, a large number of separate assessment programs would be called for. A more practical alternative to this would be a single program based on "general" dimensions which would attempt to assess the Gestalt or whole personality as was done by the O.S.S. [99].

4. Selection/design of instruments to measure the dimensions selected (in step 3). In the prototype program considerable overlap would be expected since, whenever possible, competing instruments would be included to allow validation on both of them (e.g., provide selection on a scientific basis vice hunch or conjecture).



5. Development of rating scales for use in both the assessment and evaluation programs. All dimensions common to both programs should have identical scales.

6. Perform "trial runs" to test all elements of the assessment program which require testing (e.g., instruments designed for the program). These runs should ideally employ "successful" members of the organization (U. S. Navy) as test candidates.

7. Make any revisions to the program as dictated by results of step 6.

8. Develop an assessor training program.

9. Test the assessor training program.

10. Revise the assessor training program as necessary.





## VI. ANTICIPATED RESULTS

### A. SHORT TERM (Less than 2 years)

1. An evaluation of the development objective of the prototype assessment center.

2. Improve the effectiveness and efficiency of the NPS by enhancing the attainment of stated goals (as discussed in Section IV).

3. Increased personal development of student assessors and candidates who participate in the program.

4. Development of an in-house expertise in the design and operation of an assessment center.

### B. LONG TERM (More than 2 years)

1. Evaluation of the selection and placement objectives of the prototype assessment center.

2. If the assessment center proved to be effective, the ultimate result could be improved utilization of human resources within the Navy. If one accepts the premise that people are the decisive factor in combat, the significance of this result is obvious.



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